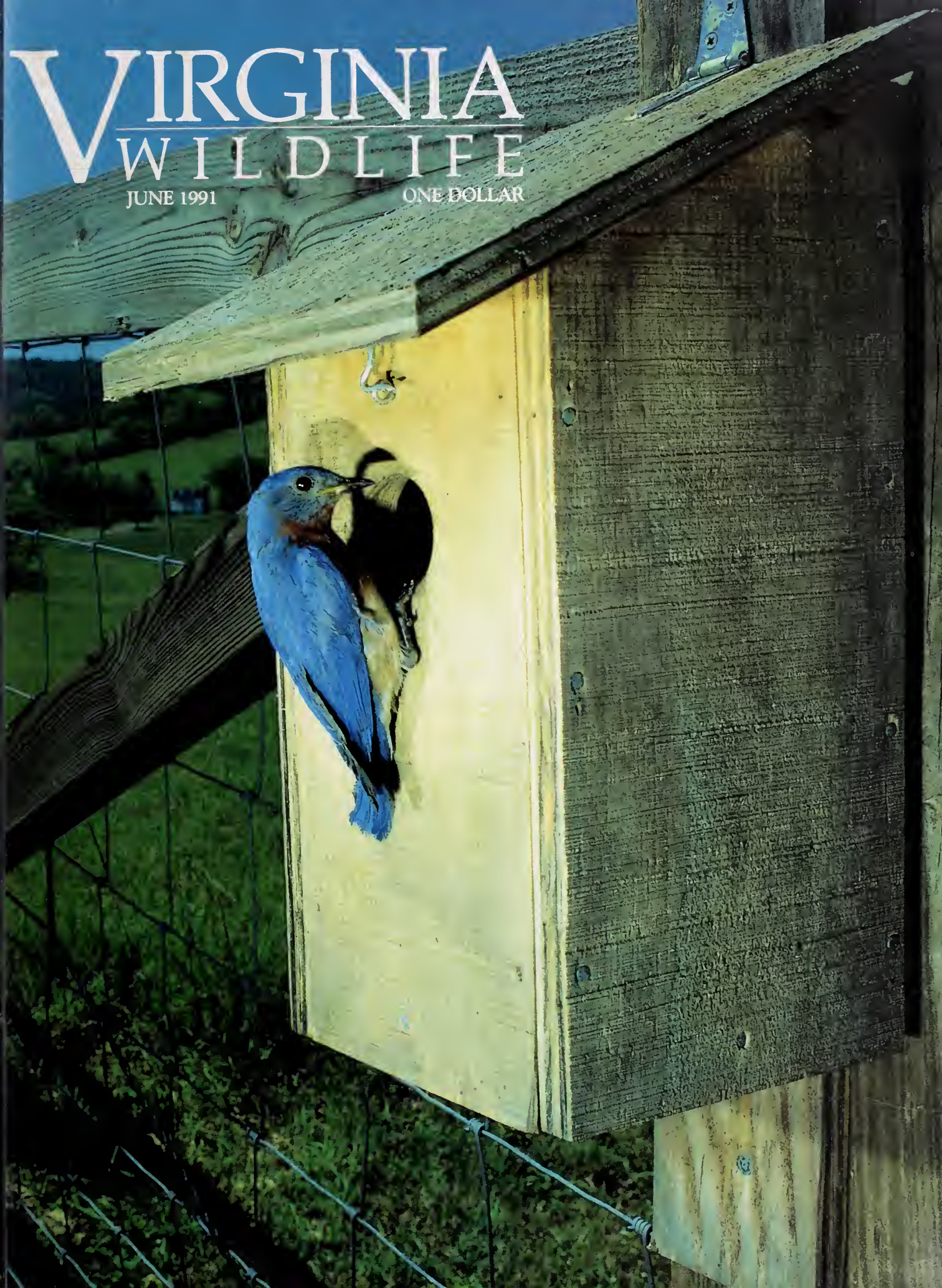
VIRGINIA WILDLIFE

JUNE 1991

ONE DOLLAR



Editor's Page

"When in Rome, do as the Romans do."

It's good to be laughed at sometimes. Otherwise, we run the risk of taking ourselves much too seriously.

For the past three years I have been an earnest (some may insist eccentric) proponent of the use of manually-driven lawnmowers and "passive" landscape design. Now, mind you, I have not "pushed" this back-to-the-pre-gasoline-good-old-days idea upon anyone else; I have simply (and smugly) set myself up as an example of what an individual can do to live a bit more gently on this planet.

All had been going smoothly for two summers. I had endured the puzzled glances of neighbors, the sympathetic offers of power mowers; and even the unmerciful ridicule of my parents who took pictures back home with them to California as evidence of my mental instability.

I had endured all gracefully, with a few rare curses and grunts directed at a lawnmower which refused to cut pencil-sized twigs, grass over six inches tall, and demanded a running start to get moving through thick clover. I used leaves as mulch, raked minimally, and trimmed bushes only to open up paths, with hand-held hedge clippers.

Through this all, I had endured. Until last week. I allowed the vocal disgust of one near and dear to me to pierce my ecological armor. He surveyed my backyard and pronounced it *nasty*. "The weeds!" said he. "The leaves!" He shook his head. "*You* are embarrassing your neighbors with your yard. It is the *worst* looking in the neighborhood." He stopped short of calling me poor white trash, but the damage had already been done. I was crushed. My attempt to use the fallen leaves from my oak trees as mulch for earthworm-seeking robins as well as azaleas was misunderstood as slovenly ("Did they float there or were they *intentionally* put there?). My love for untrimmed bushes and massive compost piles elicited a painful wince.

"*This* must be cleaned up," said he, unloading an industrial grade power mower and weed eater.

Holding onto my tattered dignity, I balked. "I *may* rake."

I retreated to the backyard. He descended on the front. The dust spewed over the house. The noise reverberated down two streets. I raked unwillingly, fuming over the indignity of it all. "Why must I conform to everyone's else's perception of beauty?" I sniffed. "Why can't people understand and see the greater good *I* am bestowing on the environment?" The high pitched whine of the weed eater hurt my ears.

"Come look," said he after 15 minutes. "Looks great, and I didn't cut any of your flowers," he boasted. I refused. "Oh, come on!" I walked to the front and burst into tears.

I'm sure I sounded ungrateful at best, and spoiled at worst, but my despair at my failed attempt to provide a model that the rest of the world would rush to emulate I did not handle with the grace expected of one of my age and upbringing. So, I cried. And sulked. And stomped in anger.

Fortunately, I was laughed at. Not rudely, mind you, but gently and with some visible restraint. I was reminded of a place in the country that both of us had visited lately that looked like it had been the scene of some pretty good summer parties, and how I had turned my nose up at all the trash (including a rusted old refrigerator and some rusted-out lawn chairs) littering the area. "What if the guy who owns that land thinks it looks *good* that way and doesn't need to be cleaned up like you do? Seems like somebody could say the same thing about your yard."

I groaned. I didn't give in, though. I simply acquiesced the point. Only later, when the story got around and things started escalating, and my friends started boo-hooing whenever they spied a power mower clipping lawns did I finally acknowledge the ridiculous. I had to laugh to ever be taken seriously again.

I realized that you can go along your merry way and do exactly what you want to do and to heck with everyone else's *wrong* way of doing things, but then you'll just be known as the local crazy lady everyone avoids listening to.

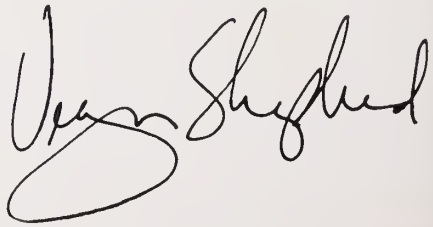
And I certainly didn't want *that* to happen. "Why don't you put hardwood mulch under the azaleas and compost the leaves?" came the none-too-innocent suggestion. "It would look a whole lot better and still give you a mulch for the birds to pick through."

It was a good point, though not a pleasant thought. Reluctantly, I climbed down from my soapbox and realized that my yard was not the vision of loveliness I perceived it to be. In an urban environment, loose leaves, no matter how lovingly bestowed beneath trees and lightly dusted across unevenly mowed grass, just don't make it as beauty in the eyes of most beholders.

I was humbled into realizing that the way to get people to change their way of thinking is to create something that most folks *want* to imitate, not scorn. And that was possible, it just took more thought and effort than I'd been willing to put into it.

Yes, much as I hate to admit it, I learned a valuable lesson. It is much more satisfying to exercise our right to be different, to be the neighborhood crazy lady, but that has its price. Everybody laughs at crazy ladies behind their backs. My friends laugh right in my face, and if I can keep calm and join in, I may learn something.

Of course, I will continue to push my mower. I have my pride.



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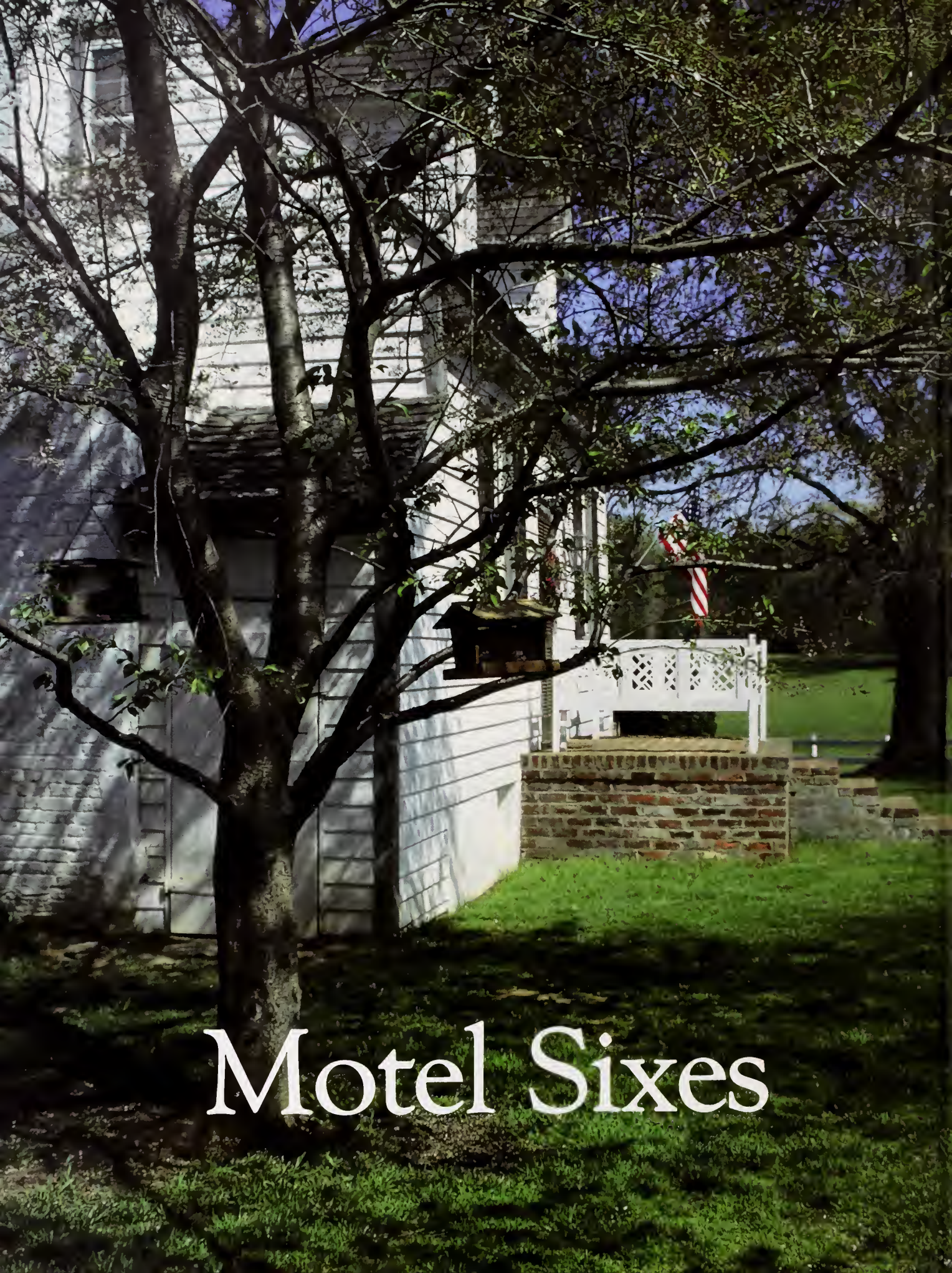
Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources



Motel Sixes

For Wildlife

by Nancy Hugo

If Tom Bodet, spokesman for Motel Six, were to promote for wildlife the kind of basic, no frills accommodations he promotes for people, he'd be a spokesman for habitats certified by the National Wildlife Federation (NWF).

Established in 1973 as a way to recognize the efforts of homeowners gardening for wildlife, the National Wildlife Federation's Backyard Habitat Program gives special certification to property owners who are providing for wildlife's basic needs: food, water, cover, and places to raise young.

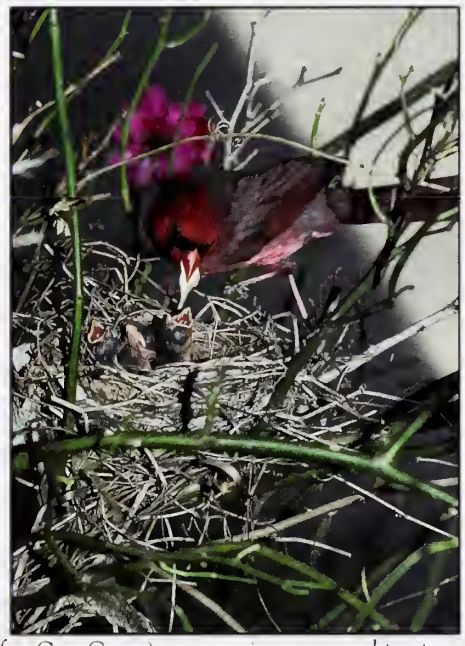
Since 1973, the National Wildlife Federation has certified 10,000 backyard habitats nationwide, and the number of applications is growing every year.

"We marry two of Americans' favorite pastimes—birdwatching and gardening," says Craig Tufts, Director of the program. "A hundred million Americans have their primary experiences with wildlife within a mile of their homes," says Tufts. "Not only that, but there's a huge need for habitat restoration, especially in urban and suburban areas where development has infringed on natural areas."

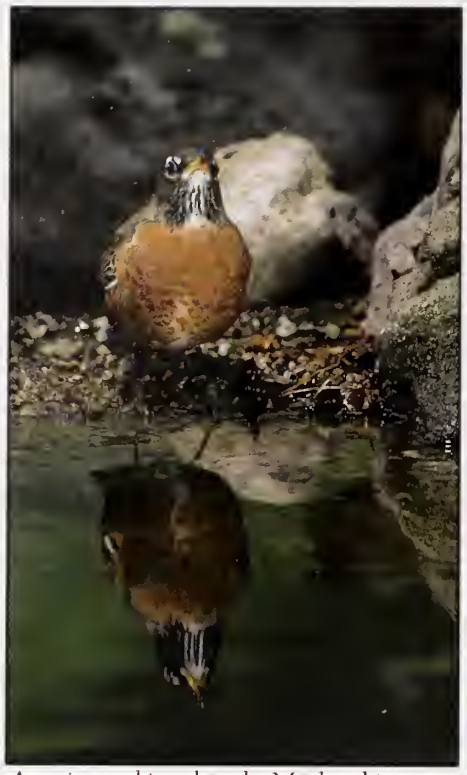
"Fifty million acres of land in this country are planted in sod grasses," says Tufts. "That's an area as large as the state of Michigan. If we could transform 80 percent of that into areas more congenial to wildlife, we'd have made a significant contribution."

The NWF's certification process works this way: a property owner interested in having his land certified as a Backyard Wildlife Habitat writes the NWF for an information packet or for a Gardening with Wildlife kit. The information packet, which costs about $5.00, includes an application for habitat certification and a 15-page booklet on creating a backyard habitat. The Gardening with Wildlife kit, which costs about $30.00, comes complete with a prepaid application (applications obtained with the information packet require a $15.00 processing fee) and with an abundance of nifty aids for improving backyard habitats. For example, the kit includes architect's templates and graph paper for designing a backyard habitat, a packet of seeds for starting a songbird and butterfly garden, a log for recording wildlife sightings, a hand lens for small insect and plant identification, a hummingbird feeder, birdhouse patterns, and a Wildlife Planting Guide Wheel which identifies trees, plants, and shrubs to benefit wildlife for every region of the country.

The application for habitat certification, which is designed as much to teach homeowners what wildlife need as it is to weed out unqualified applicants, includes places for property owners to list the ways in which they are meeting wildlife's four basic needs. Under the category for food, for example, property owners list plants on their property which pro-



The Perkins' home in Montpelier is a certified NWF backyard wildlife habitat (left and above; photos by Roy Edwards) providing for the needs of wildlife like the cardinal (above right; photo by Gary Carter) to nest, raise young, and prosper.



American robin; photo by Maslowski.

Burton NWF certified backyard; photo by Pels.

vide berries, nectar, nuts, and buds or seeds for wildlife. Under the category for cover, property owners designate ways in which they are providing wind and weather breaks as well as places for wildlife to hide from predators. Reproductive areas where wildlife may lay eggs and raise young are also listed, as are water sources such as birdbaths and streams. Although it is not required, some property owners include elaborate landscape plans and illustrative photographs with their applications. Each application is evaluated by staff at the NWF in Washington, D.C., and qualifying property owners receive a Certificate of Achievement from the Backyard Wildlife Habitat Program.

The program, originally conceived to encourage homeowners to plan their landscape with wildlife needs in mind, has moved beyond backyards to include the grounds of schools, corporations, nursing homes, and fire stations. The governor of Kansas has even had the grounds of the Kansas governor's masion certified as a Backyard Wildlife Habitat. Sizes of certified habitat also vary: some are as large as hundreds of acres, one is as small as 25 square feet. The latter habitat, on a balcony in East Boston, meets wildlife needs with a saucer of water, birdfeeders, and container plants.

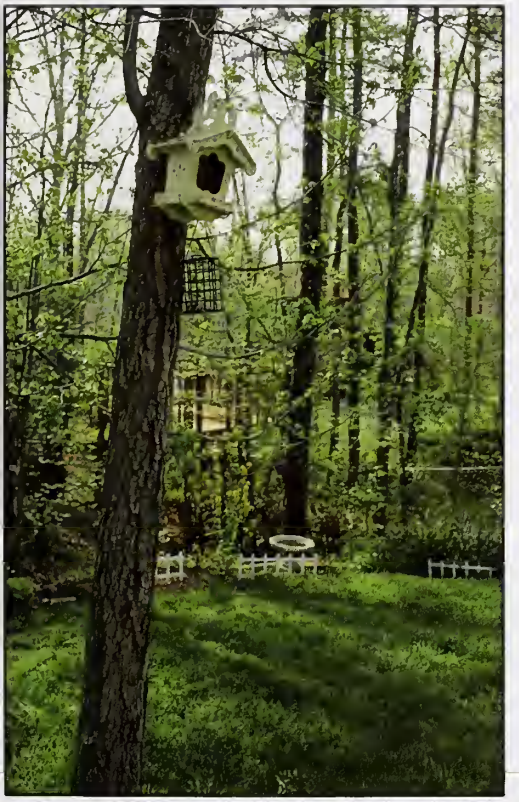
In Virginia, 333 applicants, including four schools and a civic association, have their landscapes certified as Backyard Wildlife Habitats. Visitors to many of them will find there not only the basic, no-frills necessities of a Motel Six but the accoutrements of five-star wildlife hotels.

Take Connie Burton's certified habitat in her suburban Richmond yard, for example. Burton may not be turning the sheets down for her guests, but she is lining her curbside with egg shells for the purple martins that nest in the purple martin house in her front yard. "I watched the parents take turns picking up the egg shells and taking them up to their babies last spring," says Burton. She's also feeding corn to squirrels, protecting snags for woodpeckers, planting flowers for butterflies, and constantly cleaning and replenishing the water in her birdbaths. "I used to think it sounded hokey," says Burton, "but birds really are a barometer of what's happening in the environment. If I can be just one person providing a stopping place for a cardinal, I'll be happy."

The Perkins family's certified habitat at Lombardy Farm in Montpelier, Virginia is larger. On this 80-acre farm, Canada geese visit the ponds, bats live in the barn, raptors perch on the fence posts, birds and small mammals hide in the brush piles, and songbirds nest in the hedgerows and birdhouses. Thirteen years ago Phyllis Perkins read about habitat certification in a magazine. "The application made us more aware of what we should protect," says Perkins. Sensitivity to wildlife needs also made the Perkins family forego the use of pesticides. "We don't even use tomato dust or any spray on the apples," says Perkins. Seeing as many as 17 bluebirds at a time on the property makes Phyllis Perkins feel her efforts have been rewarded. "Nature has done it," she says. "We're just trying to hold onto it."

For Tommy and Theresa Hawkes, creating a certified wildlife habitat around their Sandston, Virginia home

Gray squirrels; photo by Rob Simpson.



Burton NWF certified backyard; photo by Pels.

Shelter, food, and water are key components of any wildlife habitat. Thus, Connie Burton provides a concrete birdbath in her Richmond NWF certified backyard, feeds corn to squirrels, protects snags for woodpeckers, and plants flowers for butterflies. "If I can be just one person providing a stopping place for a cardinal," she says, "I'll be happy."

Virginia Gets Into The Act

In the not too distant future, the National Wildlife Federation will not be the only organization certifying wildlife habitats in Virginia. The Virginia Department of Game and Inland Fisheries (VDGIF) is developing a Virginia Wildlife Habitat Program which will both certify backyard habitats and provide incentives for large landowners, real estate developers, and landscapers to create, preserve, and enhance wildlife habitats on their properties. As part of this effort, VDGIF soon will have a pamphlet ready for distribution to property owners that will list trees, shrubs, and vines appropriate for various wildlife purposes.

"We're going to list only species readily available from nurseries," says Jeff Curtis, Environmental Education Coordinator for the Department.

In addition, by mid-1991, the VDGIF will be conducting seminars to teach landscape architects the basics of wildlife habitat creation and protection. Landscapers who attend these four-hour seminars will be designated by the Game Department as certified wildlife landscape architects. A list of landscapers who have participated in the program will be available to property owners who have an interest in finding landscapers who design with wildlife benefits in mind.

Curtis also hopes to find ways of providing financial incentives to those who landscape for wildlife. He envisions a program in which nurserymen will offer a 10 percent discount on the purchase of plants of value to wildlife. In return, participating nurseries will be listed in the Game Department's publications and will receive referrals from VDGIF.—*N.H.*

Backyard on Broad:

Habitat in the Heart of Richmond

Many of the thousands of motorists who pass it every day may not even know it's there, but on the west side of the Virginia Department of Game and Inland Fisheries Headquarters at 4010 West Broad in Richmond is a National Wildlife Federation certified habitat that proves you don't have to live on a farm to provide food, water, and shelter for wildlife. This 36′ X 120′ area, which sits like an oasis in the middle of the city, is as rich in wildlife as many a suburban habitat. "Backyard on Broad" has been home to nesting mourning doves, and a colony of purple martins has raised families in the habitat's purple martin house for the past three years. Other visitors include house finches, mockingbirds, robins, and goldfinches, juncos, chipmunks, and squirrels, and even four swarms of honeybees. To see how productive an urban wildlife habitat can be, visit Backyard on Broad anytime.—N.H.

Backyard on Broad; photo by Pels.

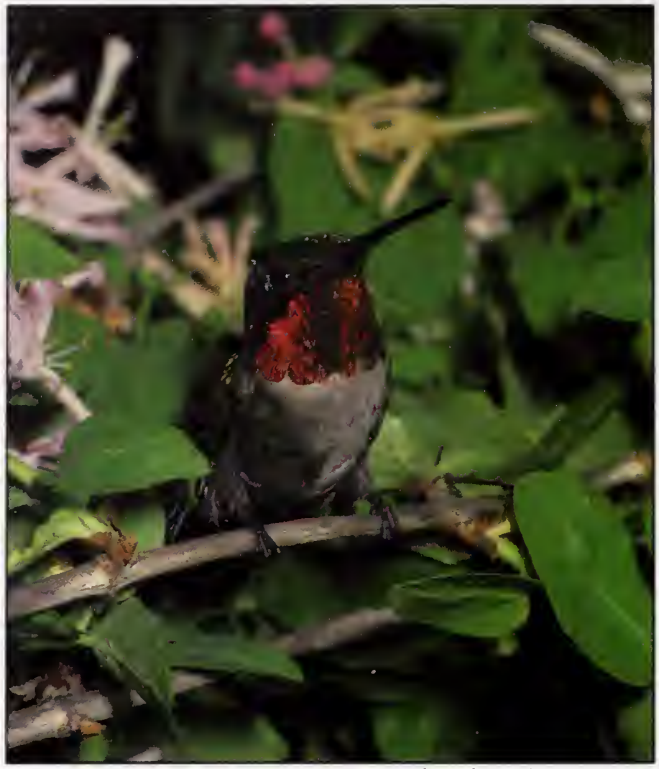


photo by Rob Simpson

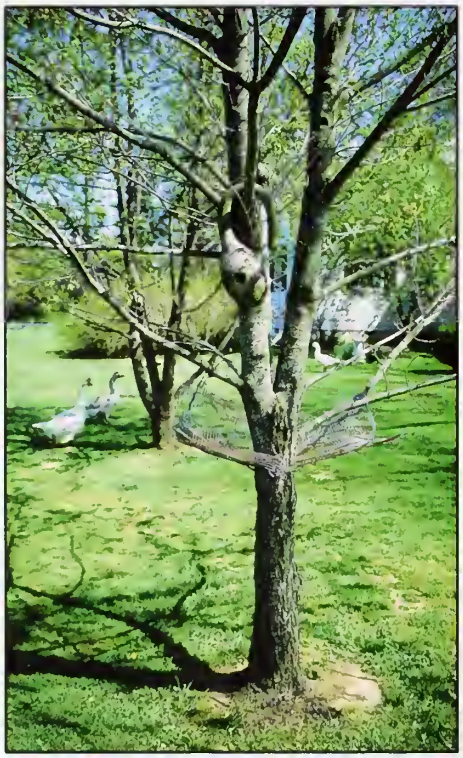


photo by Roy Edwards

Attracting wildlife to your backyard is easy. The Perkins supplemented the natural nesting sites on their farm with gourds (above), left brushpiles intact for small mammals, and refrain from using pesticides. Ruby-throated hummingbirds (top) are attracted to tubular flowers, and even domestic geese (top right) find the life good on a farm attractive to wildlife.

has been as much a joy for them as it has been a boon for wildlife. Theresa was a city girl before moving 12 years ago to this 3/4-acre homesite partially bordered by a state forest; now she delights in a possum who drinks from her birdbath, a wild turkey who comes up under the clothesline, the phoebes who nest above her back porch light fixture. "Once I found out how much we had there, I felt like I'd been missing it all along," says Theresa, who has counted 38 species of birds visiting her yard.

From recommendations in NWF literature, Theresa has tried every year to add a few plants valuable to wildlife to her yard. "I figure if you're going to buy something, you might as well make it something that's good for wildlife," she says. In addition to annual and perennial flowers that attract hummingbirds and butterflies, Hawkes has planted berry-bearing shrubs and trees for birds.

She also keeps her birdfeeders filled year-round. "It gets expensive," she says, "but there are worse things I could spend money on." When she ordered a bat house, her husband Tommy thought her enthusiasm for wildlife might have gone too far. "But he was the first one to put it together and hang it," says Theresa, who credits the bats in her bat house with ridding her property of mosquitoes. To provide shelter for birds and small mammals, the Hawkes have also built a series of small brush piles along the edge of the woods. "You've got to decide whether you want a picture-perfect garden or a habitat," says Theresa. "If brush piles are offensive to you, forget it."

Some landscapers would argue that wildlife gardeners needn't apologize even for their brush piles and that a new aesthetic is developing that will make healthy habitats—complete with tree snags, thickets, and brush piles—more highly valued than even picture-perfect lawns. In fact, they argue that even our conception of what's "picture-perfect" is changing. Says Darrel Morrison, Dean of the School of Environmental Design at the University of Georgia: "Expansive resource-consuming lawns around homes and industries will soon be unfashionable, obsolete symbols of overconsumption and pretense. In their stead the public will

photo by Roy Edwards

begin to value healthy, sustainable landscapes as beautiful for the part they play in creating healthy ecosystems as they are for the richness of their lines, forms, color, and textures."

According to Craig Tufts, this trend comes none too soon. "We're trying to reverse the trend of habitat loss by reminding people to stop for a minute, to consider the needs of wildlife, then to decide what they can do to restore a place for wildlife on their property," he says.

Tom Bodet might make the same point this way: homeowners who care about wildlife can keep the lights on for wildlife by creating certified backyard habitats.

To obtain the National Wildlife Federation's *Gardening with Wildlife* kit ($29.95 plus $3.95 for shipping) or to obtain more information on backyard habitat certification, write or call the National Wildlife Federation, 1412 Sixteenth Street, N.W. Washington, D.C. 20036-2266 (1-800-432-6564). □

Nancy Hugo is a freelance outdoor writer who lives in Ashland.

Helpful Hints For Healthy Habitats

Brush piles are homes to wildlife; photo by Roy Edwards.

*Survey your yard first. As the first step in planning your backyard habitat, take an inventory of habitat features that may already be providing food, water, and shelter to wildlife in your yard. "I was surprised by how many plants and trees I already had that were on the list," says Theresa Hawkes of trees, shrubs, and flowers in her yard that were also on the list of plants recommended for wildlife by the National Wildlife Federation.

*Be sure to provide water. According to Craig Tufts, the element most often missing from applications for backyard habitat certification is water. You don't have to build a water garden: an overturned trash can lid or clay flower pot saucer filled with water will do. Keeping the water clean and unfrozen is important, however. "Even if you don't provide seed, I think if you have water, you'll have birds," says Connie Burton, who has left the comfort of her kitchen on many a winter morning to pour boiling water from her teakettle over the ice in her birdbaths to thaw it.

*Strive for diversity. The more different species of trees, plants, and shrubs you have, the more kinds of wildlife you'll attract. Varying heights and densities of vegetation can also make your habitat richer; growing small trees or shrubs under taller trees, bordering thickly planted areas with open spaces, edging meadow-like expanses with bramble patches will all contribute to diversity. Try, too, to grow a variety of food-bearing plants that will provide fruit, nuts, and seeds all year.

*Save snags. Standing dead timber and dead or decaying limbs on large trees provide food, shelter, and nesting sites for woodpeckers and other cavity nesters. Unless they are safety hazards, try to leave snags where they stand. "The people behind us wanted to take down some dead trees," says Connie Burton. "I said 'No, no, no, no. That's where my red-bellied woodpeckers live!"

*Maximize edges. Areas where two or more types of vegetation come together (forest meets meadow, marsh meets pond, flowers give way to shrubs) are richer in wildlife than any one of these areas alone. You can create an edge along the border of your property, for example, by leaving a strip of unmowed (or infrequently mowed) meadow between your lawn and the woods.

*Avoid using broad spectrum insecticides. According to Craig Tufts, the most important foods for wildlife that our landscaping efforts provide are insects. For most of the birds, nearly all of our amphibians, and many small mammals, healthy diverse populations of insects are the most important food source our landscapes generate. If problems with insect pests develop, try a biological control. Be particularly wary of pesticide use if you are creating a butterfly garden. Says Craig Tufts of caterpillars, "Think of them as baby butterflies."

photo by Doug Stamm

The Maury River Has It All

by Bruce Ingram

The Maury River has so many charms that it's hard to know which one of them to talk about first. On a historical level, the story of how the stream received its name is indeed a fascinating one. In terms of beauty, the Maury ranks near the top among the state's streams. And from a fishing standpoint, this tributary of the James offers some of the best smallmouth bass sportfishing to be found in the Old Dominion.

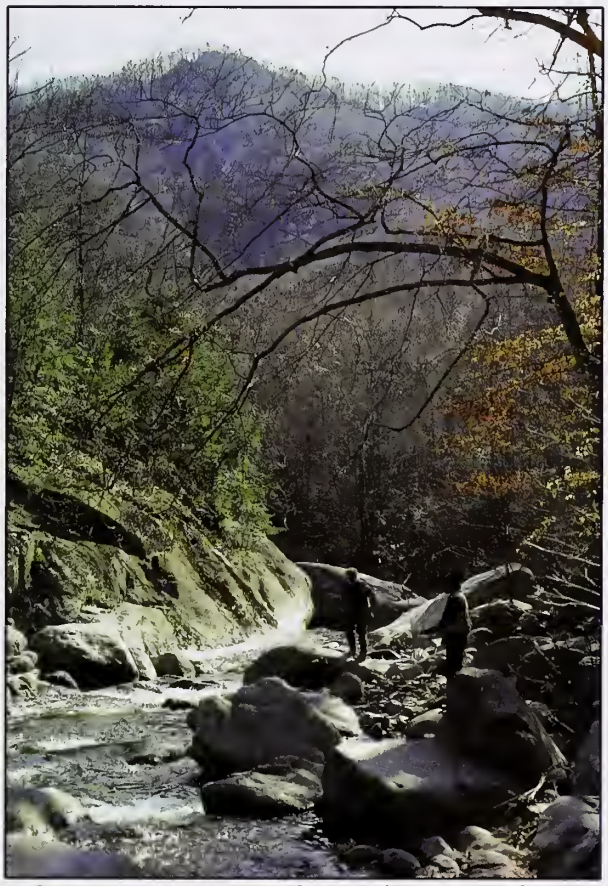
The river has as its namesake Commodore Matthew Fontaine Maury, the legendary "Pathfinder of the Seas" who was a 19th century pioneer in the field of oceanography. Maury's book, *The Physical Geography of the Sea*, dealing with wind and current charts for the Atlantic, Pacific, and Indian Oceans, resulted in the decrease of sailing times and made navigation much safer.

Matthew Maury was also a major figure during the Civil War. He was in charge of river, harbor, and coastal defenses for the South. And after the conflict, the admiral became a meteorology professor at Virginia Military Institute in Lexington. Living in Rockbridge County, Maury became enamoured with the stream which would one day bear his name, but which was then known as the North River or the North Branch of the James.

Several decades after Maury's death in 1873, the state began looking for ways to honor him. During the early part of this century, January 14 was designated as Maury Day. In 1923, the Virginia General Assembly decreed that a monument lauding the admiral be placed in Goshen Pass through which the North River flowed.

These accolades were quite impressive, but in 1945 the General Assembly changed the name of the North River to the Maury, thus giving this Confederate leader an eternal tribute.

On an aesthetic level, this Rockbridge County waterway has much to recommend it. One of the most beautiful sections of the stream is the part which courses through Goshen Pass. In the late spring, the mountain laurel and rhododendron which bloom there are truly astonishing. Indeed, when Commodore Maury lay dying during the winter of 1873, he asked that he not be buried until spring, so that he could once again pass through Goshen Pass on his way to his final resting place in Richmond. Like many of us today, the "Pathfinder" was also enchanted with the pristine beauty of Goshen Pass.



The Maury River is well-known for its scenic beauty, whitewater, and good smallmouth fishing; photo by Spike Knuth.

As an outdoor writer, I do quite a bit of traveling across the Commonwealth to fish the state's streams. To me, the Maury ranks right up there with the Rappahannock and Rapidan Rivers as the most beautiful in the state. Johnny Eanes, a resident of Botetourt County and a member of the Float Fishermen of Virginia, also speaks highly of the stream.

"Of course, I haven't seen all of the state's rivers, but I have seen most of them and the Maury is definitely one of the most beautiful," enthused Eanes. "Since the Maury starts in the mountains and flows toward the piedmont, it changes from a swiftly moving, narrow trout stream to a riffle-pool, slower moving bass stream. By the time the Maury gets to Bean's Bottom right above Lexington, the river has slowed quite a bit.

"Another interesting thing about the Maury is the way the stream changes through the seasons. In the winter and spring, the upper Maury has some of the best whitewater in Virginia, particularly the Goshen Pass area which has Class III and IV rapids when the water is high from runoff. Kayakers just love this section during the winter. But during the low water periods of summer and fall, you can easily wade fish the Pass for smallmouth bass and rock bass."

Regarding fishing trips, there are a number to choose from. For whitewater enthusiasts and expert canoeists, the six-mile jaunt from Goshen to Rockbridge Baths is a popular spring outing. Class II to IV rapids exist on this stretch, including the infamous "Devil's Kitchen." This trip takes you through the beautiful Goshen Pass that Matthew Maury loved so much. Trout can be caught here, particularly in the spring. Smallmouth bass and rock bass are also present, but these two species are on the small side in this part of the Maury. Put-in is on Route 39 above the Pass and take-out is on Route 39 at Rockbridge Baths. Again, do not attempt to canoe this stretch—especially in the spring—unless you are an expert. I prefer to wade and fish this section during the summer after water levels have dropped.

Another good trip is Rockbridge Baths to Bean's Bottom. This is an

photo by Bruce Ingram

Smallmouth bass; photo by Doug Stamm.

all-day trip of 14 miles with plenty of Class I and II rapids and several Class IIIs. Trout are rare in this section, and the smallmouth bass and rock bass tend to be better-sized than those in Goshen Pass.

Having float fished this section, I would rate it as one of the most scenic on the Maury. Smallmouth bass are quite abundant here. Put-in is at Rockbridge Baths behind the Maury General Store on Route 39. If your time is limited, you may take out halfway through the trip at Lindsey's Bridge on Route 622 which is off Route 39. If you stay the course, the take-out is at Bean's Bottom (which is above Lexington) which is on Route 631. Taking out at Bean's Bottom also enables you to avoid dealing with a dam in Lexington. Again, this is another section on the Maury for the accomplished canoeist.

A third float trip is the Lexington to the Ben Salem Wayside on Route 60 section. Plenty of Class I rapids exist on this section and there is one Class III created by an old dam. Canoeists should scout out this broken-up dam before attempting to make their way through it. A chute on the left side makes for a convenient passageway, but this chute is often clogged with debris. If that is the case, portage around the right side.

On this six-mile excursion, the river is very wooded and there is not much farmland. Fishing is very good for smallmouth bass, rock bass, and redbreast sunfish. Put-in is on Route 631 which is off Route 11. The James River Basin Canoe Livery is located shortly below the wayside on Route 60 and is an excellent source for current stream conditions and canoe rental. You can contact the livery at Route 4, Box 125, Lexington, VA 24450 (703/261-7334).

My favorite fishing trip on the Maury is Glen Maury Park in Buena Vista to the Kanawha Canal Locks on Route 663. This six-mile trip offers very good fishing and numerous Class I rapids and a few IIs. The river is more open here, but there is also plenty of woodland. While once fishing this section I caught a trio of smallies over 12 inches, including a beautiful 20-inch female which fell for a six-inch, black Mr. Twister worm. That bronzeback came out from under a deep-water ledge, a feature which this section has in abundance.

If you choose not to take out at the locks on Route 663, which is located off Route 501, you may continue another half dozen miles to the Game Department landing at Glasgow. This section, as it nears the James River, has fewer rapids than the other routes and more deep pools. Buffalo Creek also empties into the Maury on this section and there are also a few islands. Boaters are encouraged to take out at the Glasgow Game Department landing instead of paddling on down into the James. There is a "notorious boat buster" 100 yards below the landing.

An extemely helpful publication for planning a trip to the Maury is the *Virginia Atlas & Gazetteer* available for $12.95 by contacting the DeLorme Mapping Company, P.O. Box 298, Freeport, Maine 04032 (800-227-1656).

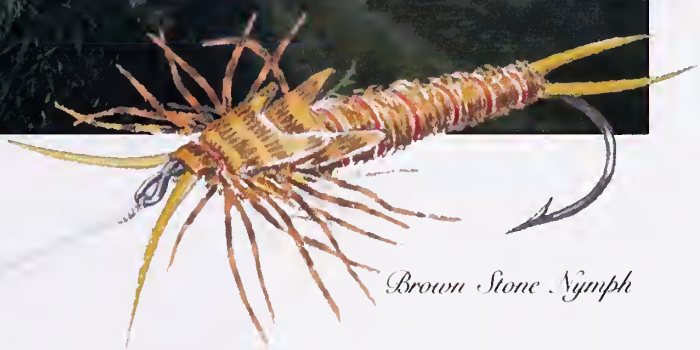
Virginia is blessed to have so many wonderful upland streams, and the Maury River is one of the best. Matthew Maury knew that 100 years ago. □

photo by Bruce Ingram

There are several good canoeing floatfishing trips that can be made on the Maury River, if one is careful to plan a trip when the water levels are safe.

Bruce Ingram is the Virginia editor for Outdoor Life *magazine and a frequent contributor to* Virginia Wildlife.

photo by Bill Lane



Brown Stone Nymph

The Nymphing Game

When the smallmouth action slows, it's time for a nymph.

by Harry Murray

illustrations by Michael Simon

Think "meat and potatoes" when you think of nymph fishing for smallmouth bass. These larval stages of aquatic insects are basic food items for bass, and for the flyfishing angler facing difficult fishing conditions, tying on a nymph brings you back to the basics.

In order to take advantage of this type of smallmouth angling, however, let's determine some of the specific kinds of nymphs and examine the sections of the streams in which each can be found.

Hellgrammites are an extremely important part of the diets of smallmouth bass in most of our streams. This larva of the dobson fly is far from being a "little bug." On the contrary, being about four inches long at maturity, he is large enough to attract the largest smallmouth that swims.

Hellgrammites are found in their greatest concentrations in heavy riffles. Living under stones ranging from tennis ball size up to basketball size for their multi-year life span, they provide a great reservoir of food for the bass.

A fly pattern devised primarily by Ron Kommer of Norfolk has turned out to be one of the most productive imitations of this larva throughout the state. Ron gave it the name Murray's Hellgrammite, more in sympathy for my efforts to come up with a workable fly than for any significant contribution on my part.

Since the real hellgrammites stick close to the stream bottom, that is exactly where we should strive to fish our flies. The easiest way to achieve this is by using a tactic called "upstream dead drift fishing." Since the goal is to get our nymphs to drift naturally downstream right along the stream bottom, it is imperative that we negate most of the influence of the current upon our line and leader. This is most easily achieved by casting either straight upstream or up and across stream at only a slight angle.

For example, I like to wade into the stream just below the lowest portion of the riffle and cast my nymph about 30 feet upstream. As the cur-

photo by Rob Simpson

Some of the best nymphs to use while smallmouth bass fishing (top to bottom): Murray's Hellgrammite, Marabou Damselfly Nymph, Brooks' Dark Stonefly Nymph; photo by Harry Murray.

rent carries the nymph to the stream bottom and pushes it back downstream, I retrieve the line with my line hand at the same rate the nymph is drifting. If I find I am retrieving the line too quickly the nymph will be pulled up off the bottom, which may rob me of some strikes. However, if I retrieve the line slower than my nymph is drifting, slack will be formed in the leader and line, and if a smallmouth bass picks up my nymph I will have no indication of his take and I'll probably miss him entirely.

Several adaptations to our tackle can help us in detecting a strike. I like to use a nine-foot compound tapered leader which has five feet of fluorescent red Amnesia monofilament incorporated into the butt section. Additionally, I use three Scientific Anglers indicators spaced along the leader, with the first one being about three feet above the nymph and the other two at approximately one-foot intervals.

When using this leader and indicator system in nymph fishing, I strive to see the closest indicator to the nymph. Once this is located, I watch it very closely as it drifts with the current, and I set the hook firmly at the first hint of a strike. This is not greatly different than the youngster using a bobber to fish for bluegills—when the bobber goes under, he yanks back and hooks the fish. If the water is real deep and none of the indicators can be seen, I watch the fluorescent butt section of the leader to telegraph the fish's strike to me.

In order to simplify the control of both the drift and the strike when fishing nymphs upstream, one should work a relatively short line. A 30-foot cast is about the maximum, and often much less is desirable. The problem is not *getting* the strike, but rather, *detecting* the strike.

Large stonefly nymphs also abound in the heavy riffles of our bass streams. Charley Brooks' Dark Stonefly Nymph in sizes 4, 6, and 8 is one of the best imitations of this insect I've ever found. The technique just described with the hellgrammites is also very productive with this pattern.

Additionally, a tactic and nymph pattern I encountered in the large Montana trout rivers many years ago has turned out be exceptionally productive in our smallmouth rivers. The fly is the Bitch Creek Nymph, and the manner of fishing is somewhat similar to the Leisenring Lift of yesteryear.

It goes like this. One wades into the river below a heavy riffle where there is productive-looking water straight ahead and continuing downstream. The cast is made about 10 feet upstream and 20 feet out. The first one third of the drift is used simply to allow the Bitch Creek Nymph to sink to the bottom and to get it under control. At this point the nymph should be drifting along the bottom straight out from where you are standing. With a slow, gradual upswing of the whole rod, lift the nymph about a foot up off the stream bottom. This enticing nymph action often prompts violent strikes from bass which ignore conventional tactics. If, however, the strike does not come to the first lift, simply drop the rod back to the normal level and continue this lift-drift-lift-drift action until the fly reaches the downstream end of the swing. One can continue this technique by working across or down the river or both. Normally it is effective as long as the heavy to moderate current continues.

Our rivers are loaded with the underwater forms of caddisflies, and the bass feed very heavily upon them. If you've ever driven across a river bridge about dusk on a late May evening and had thousands of "bugs" splatter your windshield, you have encountered caddisflies. One evening I fished the North Fork of the Shenandoah River just east of Edinburg, Virginia when there was a caddis hatch on. The fishing was exceptionally good with many nice bass falling to a size 12 Brown Caddis Pupa. As I waded ashore, I noticed a very thick greenish gelatinous mass all over my waders below the waterline. A closer examination was startling! My waders were coated with caddis egg masses which had been dropped into the stream by the adult flies.

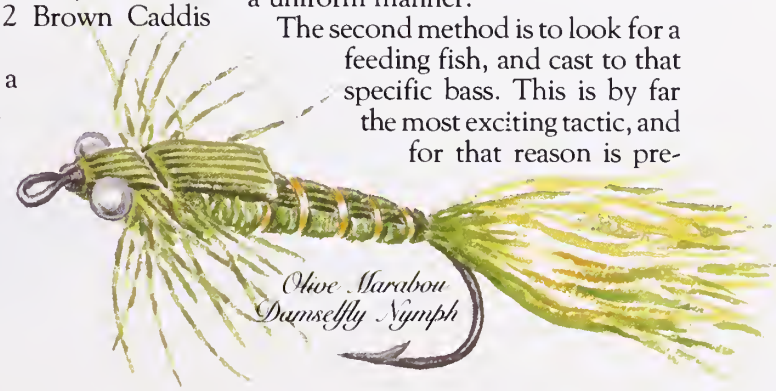
Since caddis are present in our streams in such great populations, it is not necessary to wait for a windshield-covering hatch before fishing these patterns. An effective ploy is to fish down and across stream with a size 12 Olive or Brown Caddis Larva or Pupa in areas of medium speed currents. Upon delivering the cast, I like to impart a slow twitching action to the fly which I continue through the entire drift.

Mayfly nymphs figure significantly in the smallmouth's diet. Although most of these are fairly small, feeding primarily the young fish, there are several which excite the large bass, and certainly move hordes of medium-sized fish.

If you haven't been on the Potomac River or lower Shenandoah River during the White Miller hatch in late July or early August, you've missed something. I've fished many of the famous hatches on some of the finest trout streams throughout the country, and although many are quite impressive, I honestly don't believe any of them are as dense as our White Miller hatch. There are so many of these mayflies that they get down your neck, into your mouth and ears and under your glasses. There are two methods of fishing for smallmouth during this hatch. And, a pattern such as Whitlock's Red Squirrel Nymph in size 10 works equally well with both systems.

The first is very similar to the tactic discussed for fishing the caddis hatch, where the fly is cast across stream and gently twitched back through the current. Here, one is striving to cover all of the productive-looking water in a uniform manner.

The second method is to look for a feeding fish, and cast to that specific bass. This is by far the most exciting tactic, and for that reason is pre-



Damselfly nymphs can be found in great concentrations around log piles like this; fish them very carefully with a slow darting fly action; photo by Harry Murray.

ferrred by most anglers. To begin with, the nymphs are emerging, the duns are riding the surface, and the adult mayflies are returning to lay eggs—all at the same time. There are usually many feeders working within casting distance, but with this smorgasbord of insects, you may have a problem deterimining exactly which one is feeding on what. Finally, you must realize that all of this is taking place in the last moments of fleeting daylight, as the evening slips into night. Challenging? You bet. Rewarding? Definitely! The method which works best for me is to locate a riser down and across stream from where I'm standing and then to cast my nymph about a foot above and beyond him so I can swing the nymph right through the spot he rose.

Every year I see more and more damselflies over our smallmouth streams, with the heaviest concentrations usually being around aquatic grass beds. I often make some good catches with a size 10 Marabou Damselfly Nymph by casting it right beside the grass beds and slowly swimming it out into open water. Since the hot spot is close to the grass, I usually fish it out only about 10 feet from the grass before I pick it up and recast it back in tight to the grass. I've found that I take many more bass this way than if I fish it all the way back to me through open water.

Dragonfly nymphs are consumed in good numbers by smallmouth bass in the slower sections of our rivers. This robust dark nymph which reaches several inches in length swims along the stream bottom with a spurting action. I like to mimic this action with a size 8 long shank Dragonfly Nymph by stripping it through the slower sections of the pools with six-inch darting actions. These sections of the river seldom have real strong currents, but their depths occasionally present a problem in getting our flies to the stream bottom. I always start fishing these areas with a floating line with hopes that my weighted nymph, and possibly an added split shot, will give me adequate depth. However, if this does not get my fly to the bottom, I'll switch to a sinking tip fly line. This fly line, in which the first 10 feet sinks while the rest floats, is an excellent compromise for using a bottom searching fly pattern while retaining the control and strike detecting attributes of a floating line.

Fly tackle for bass nymph fishing is not highly specialized. However, there are a few aspects to consider which will make this type of angling easier and more rewarding. Fly rods which are from eight and a half to nine and a half feet long provide better control of the drifting nymphs than shorter rods. These should balance with fly lines in the seven to eight weight range which are required for smooth casting with the large nymphs. These fly lines can be either conventional weight forward tapers or weight forward bass bug tapers. Floating fly line certainly covers the majority of our needs, but there is definitely a place for a moderately fast sinking tip fly line in our arsenal. When using the floating lines, I like nine-foot long leaders constructed with a knotted compound taper to 1X, 2X, or 3X. As an aid in strike detection and drift evaluation, I install three Scientific Anglers indicators along the leader, starting about three feet above the nymph. The fly reel should be selected with consideration given to its durability and line capacity while not being excessively heavy.

I strongly encourage you to try the nymphing game! Many accomplished anglers feel it will take worthy bass when other methods fall short. □

Harry Murray is a freelance writer who teaches fishing and fly tying in Edinburg, Virginia.

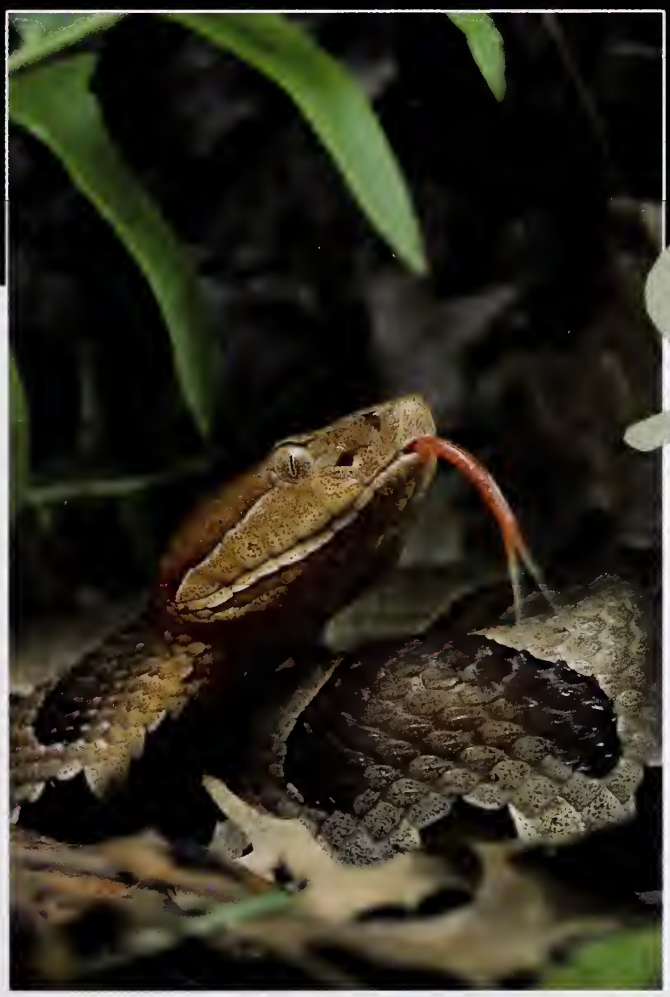
Red Squirrel Nymph

1.

SNAKES

Predators of amazing skill and grace.

by Joseph Mitchell



2.

Following is a list of the snakes we have pictured on pps. 17-19. Look for the number accompanying the picture and match it below:

1. ***Rough green snake*** (Opheodrys aestivus)—*This consummate predator is shown eating a praying mantis, which is in turn consuming a great golden digger wasp; photo by David Liebman.*

2. ***Copperhead*** (Agkistrodon contortrix); *photo by Rob Simpson.*

3. ***Hognosed snake*** (Heterodon platirhinos)—*This snake is good at putting on a show to frighten off impending trouble by spreading its neck, hissing loudly and striking with its mouth closed; photo by Rob Simpson.*

4. ***Hognosed snake*** (Heterodon platirhinos)—*When all other defensive methods fail, this snake will "play dead" by rolling over on its back and dangling its tongue; photo by Rob Simpson.*

5. ***Cottonmouth*** (Agkistrodon piscivorus); *photo by R. W. VanDevender.*

6. ***Timber rattlesnake*** (Crotalus horridus)—*Rattlesnakes give birth to live young—here one is pictured emerging from its embryonic sac; photo by R. W. VanDevender.*

7. ***Southeastern crowned snake*** (Tantilla coronata)—*This slender, small snake reaching only 12-13 inches in length is our only snake which preys on centipedes; photo by R. W. VanDevender.*

8. ***Ringnecked snake*** (Diadophis punctatus); *photo by Rob and Melissa Simpson.*

9. ***Canebrake rattlesnake*** (Crotalus horridus atricaudatus); *photo by Rob Simpson.*

10. ***Timber rattlesnake*** (Crotalus horridus); *photo by R. W. VanDevender.*

11. ***Northern water snake*** (Nerodia sipedon); *photo by Michael P. Gadmoski.*

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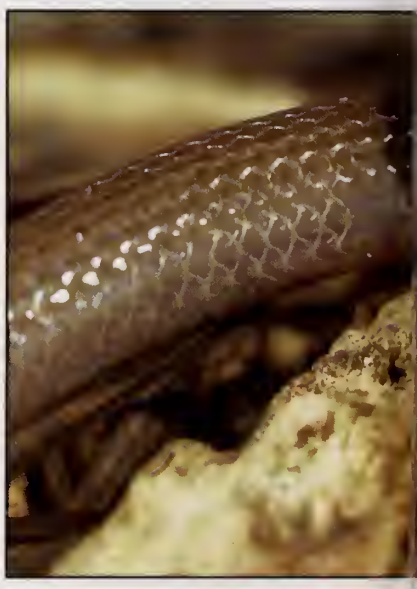

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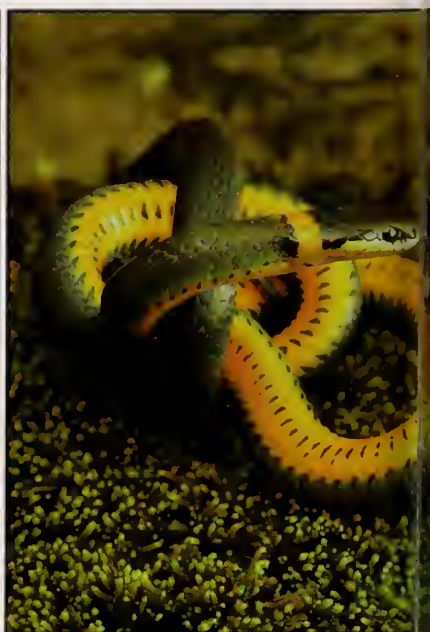

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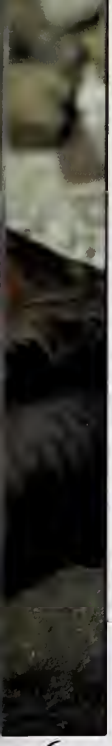

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12. *Cottonmouths* (Agkistrodon piscivorus)—*A male snake courts a female by rubbing his head along her back and intertwining his body with hers. Rubbing causes the release of chemical pheromones that stimulate both sexes to mate; photo by Susan Glascock.*

7.

11.

8.

Snakes. The word sends chills up the spines of many people. Yet, snakes are fascinating creatures that have played important roles in Virginia's history and ecology. Simply put, snakes are predators. They eat other animals. Unfortunately, most people do not understand the role of predators in nature and fear them. Our historical fear of snakes is rooted in the beliefs that most snakes, especially the colorful ones, are poisonous and that most will bite humans. Both beliefs are groundless, as we will see.

Frankly, I like snakes. I am fascinated by them. How well would you get around, feed yourself, or court the opposite sex without any legs or arms? Snakes do it all the time, and sometimes with great flair.

Locomotion is accomplished by an intricate set of muscles and ribs, along with a very flexible backbone of 100 or more vertebrae. Snakes can undulate like eels in water (lateral undulation), draw up like accordions and extend themselves forward (concertina movement), or sidewind over loose sand. I have never seen a Virginia snake use sidewinding, but they sure use the other two forms of locomotion.

Some snakes catch and swallow their prey alive, as hognosed snakes do with toads. Some kill prey with venom through sophisticated interactions of muscles, jawbones, and fangs, like our venomous snakes. And some suffocate their prey by constriction, like king snakes. Snakes, which always swallow their prey whole, can take in large meals, sometimes much larger than themselves, and not eat again for weeks.

Snakes perform elaborate courtship rituals. Males seek mates by following scent trails left by females. In some species, like rattlesnakes and copperheads, two males may vie for the privilege of mating with the nearby female by performing a combat dance. They rear up, intertwine, and seek to topple the opponent. The winner takes all and no one gets hurt.

A male courts a female by rubbing his head along her back and intertwining his body with hers. Rubbing causes the release of chemical pheromones that stimulate both sexes to mate. Male snakes, like lizards, have two copulatory organs called hemipenes. The organs lie inverted in the base of the tail until mating when one is everted and inserted into the female's cloaca. Spines and ridges on

the hemipene provide anchoring. Fertilization is internal. The entire process can last from a few minutes to several hours.

The first step in understanding these fascinating behaviors is to be able to properly identify snakes. It takes a little work, but it will ultimately benefit you and the animals.

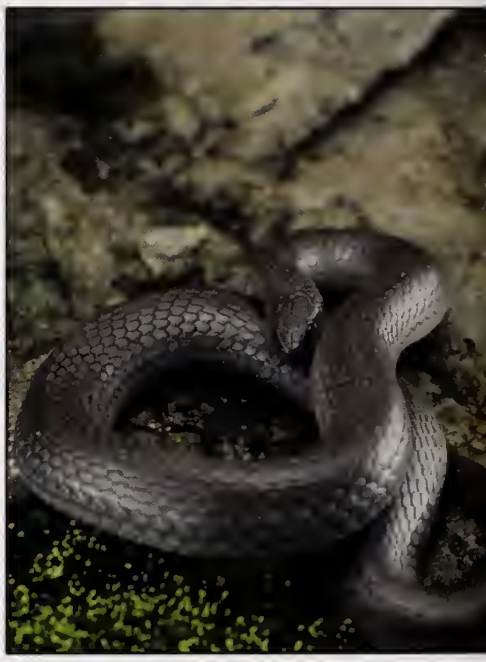
Let's start with the venomous snakes everyone should know. All three species occurring in Virginia are predators of small mammals, although the cottonmouth eats fish, frogs, snakes, and turtles as well. The copperhead *(Agkistrodon contortrix)* is found in every county in the Commonwealth, even in some urban areas. Its signature is the series of dark brown, hourglass-shaped cross bands along a reddish-brown to light brown back. The narrow waist of the hourglass is positioned at the middle of the back and the wider portions are located in the sides. Some are broken at the middle, but all copperheads will have at least some complete bands. Baby copperheads have a bright yellow tail tip.

The cottonmouth *(Agkistrodon piscivorus)* is found associated with habitats in southeastern Virginia. It is uncommon from the Dismal Swamp westward. Small, isolated populations are found in Chesterfield and Sussex counties and a colony is located in the lower peninsula above the James River. Cottonmouths are not found north of the Hopewell area, as some may claim. These robust snakes have wide, black to dark brown crossbands on a brown to olive-yellow body. Cottonmouths will sometimes stand their ground when encountered and open their mouths, exposing the white interior. This defensive posture may scare away large, dangerous animals like deer that could kill them with their sharp hoofs. However, I do wonder how well it works to scare away humans.

Many, many people call virtually every dark, aquatic snake they see water moccasins. They think these snakes are venomous. This happens all the time in areas well outside the natural range of the cottonmouth. The species most often misidentified is the northern water snake *(Nerodia sipedon)* which occurs throughout Virginia. It is usually drab brown with a series of darker brown bands on the anterior part of its back and irregular blotches on the posterior part of its back. Water snakes will bite if stepped on or grabbed, and they inflict a nasty wound. Their teeth are long and recurved; adapted, no doubt, to hold onto the slippery fish they eat. A bite from one of these snakes is like a bad briar scratch. I have never had an infection from the many bites I've sustained from this species. Try to learn how to identify a cottonmouth from a northern water snake. An important thing to know is that water snakes swim with just their heads above the water's surface. Cot-

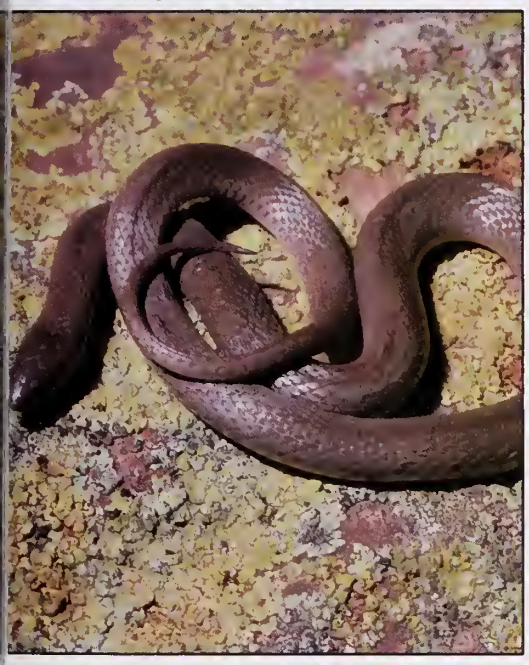
Northern brown snake (Storeria dekayi); *photo by R. W. VanDevender.*

Eastern worm snake (Carphophis amoenus); *photo by Rob Simpson.*



Smooth earth snake (Virginia valeriae); *photo by Rob Simpson.*

Red-bellied snake (Storeria occipitomaculata); *photo by R. W. VanDevender.*



Rough earth snake (Virginia striatula); *photo by R. W. VanDevender.*

tonmouths, on the other hand, float with most of their upper bodies above the surface.

There is one species of rattlesnake in Virginia with two races, or more properly, subspecies. The mountain race, called the timber rattlesnake *(Crotalus horridus)*, is restricted to the western part of the state. Its life revolves around ancestral, communal hibernation dens, each of which serves as a center for a population. Timber rattlesnakes are yellow to black with a series of black chevrons along their backs. Their black tails bear a string of rattles, each segment of which is added each time the snake sheds its skin.

The lowland race, or subspecies of the timber rattlesnake is the canebrake *(Crotalus horridus atricaudatus)*. Historically it was found in extreme southeastern Virginia, the lower portion of the York-James peninsula, and westward into the piedmont along the Virginia-North Carolina line. It, too, has black chevrons on its back, but its background color is pinkish to light tan and there is usually a narrow chestnut-colored stripe down the middle of its back. Populations of this race have been and are being exterminated by loss of habitat due largely to urbanization. It is a sad legacy of our times when an important part of our historical and natural heritage, like the canebrake, may eventually disappear from Virginia.

The remaining 27 species of snakes inhabitating Virginia are either completely nonpoisonous or possess saliva toxic to their prey. The hognosed snake *(Heterodon platirhinos)* is notorious for putting on a good show. Its defensive behavior is to spread its neck, hiss loudly, and strike with its mouth closed. This has earned it names like "spreadhead moccasin" and "blow viper." If one is persistent, the hognosed snake will shift into its next phase and writhe as if in agony, get dirt in its anal opening and mouth, dangle its tongue, and play dead. Of course, all proper dead snakes lie on their backs, so if you place one on its belly, the snake will promptly flip onto its back again.

This predator of toads never bites under most circumstances, but there are recorded cases of snake hobbyists suffering mild envenomation from an accidental bite of one they were handling. The hognosed snake has enlarged rear teeth in the upper mouth that puncture a toad as it is being swallowed in order to deflate it (toads inflate as a defense against predators). A puncture wound by these teeth allows the snake's saliva to penetrate through the skin. Reported symptoms are bee sting-like pain, swelling in the area of the bite, discoloration, and tenderness. These persist for no longer than a day with little or no treatment. If you don't play with this snake, you have nothing to fear.

The only other snake occurring in Virginia that possesses enlarged rear teeth is the southeastern crowned snake *(Tantilla coronata)*. It is a small, slender snake reaching only 12-13 inches in total length. Its mouth is so small that the chance of being bitten by one is remote at best. This species is seldom seen; I know of five confirmed places where it has been found in Virginia. All sites are in dry, pine-associated habitats. It is the only Virginia snake that eats centipedes, a predator of predators.

The most notorious predator of snakes in this part of the country is another snake, the eastern king snake *(Lampropeltis getula)*. King snakes are immune to the venom of rattlesnakes, copperheads, and cottonmouths. One was seen killing and eating a copperhead in the Dismal Swamp in 1985. They also eat small mammals and birds, frogs, lizards, and turtle eggs. These snakes are powerful constrictors and subdue their prey by suffocation within their coils. Almost all of the known populations are east of the Blue Ridge. Another race, the black kingsnake *(Lampropeltis getula nigra)*, is found in far southwestern Virginia. I don't know of any locations for this species north of the New River and west of the Blue Ridge. These handsome snakes are shiny black with either a white to yellow chain-like pattern (eastern king), or irregular pattern of small specks on their back (black king).

Most of us know what black snakes look like (see April 1990 issue of *Virginia Wildlife*). We see many of them killed on the state's roads every year. It's a conspicuous species. There are, however, besides the southeastern crowned snake, six species of small snakes that most people seldom ever see. This is because, unlike those of us who like snakes, most of

Black king snake (Lampropeltis getula nigra); *photo by R. W. VanDevender.*

Eastern king snake (Lampropeltis getula); *photo by R. W. VanDevender.*

you do not turn over logs and rocks looking for them. These snakes are predators of small invertebrate prey, like earthworms. They live underground most of their lives. My backyard in western Henrico County has yielded all six species. Some of you will encounter one or more of these snakes in your garden this year. Perhaps by reading this article you will not kill them first and wonder about them later. Perhaps you will see the value in having these small predators around.

All of these small snakes are less than 18 inches in length and most are usually less than a foot. All are harmless. I cannot recall ever being bitten by one of the many I've caught.

The species people can recognize most easily is the ringnecked snake *(Diadophis punctatus)* which has a yellow collar on an otherwise gray or gray-brown body. The snake that both looks like and eats mostly earthworms is the—you guessed it—worm snake *(Carphophis amoenus)*. It is uniform brown with a pink belly. Its head is flattened to allow better penetration through the soil. Its tail has a pointed tip that is made of the same material as our fingernails. The tail tip is used to probe the collector's hand but does not break the skin. Both of these species lay eggs in rotting logs and under rocks late-May though mid-July.

Four species of small snakes you may find under flower pots or in the garden bear their young alive, usually in August or September. Two of these are uniformly gray in body color. One, the smooth earth snake *(Virginia valeriae)*, has smooth scales with no ridges, whereas the other, the rough earth snake *(Virginia striatula)*, has scales with a ridge (keel) along the center of each individual body scale. Unless you want to pick them up and look closely at the scales, it may be best to call these simply earth snakes. The northern brown snake *(Storeria dekayi)* is light to dark brown with a row of paired black dots down the back and a black streak on each jaw. Its cousin, the red-bellied snake *(Storeria occipitomaculata)* is either brown or slate gray with a reddish belly bordered by black. These latter two species are notable because they eat snails and slugs. Yes, slugs, a common garden pest. Keeping several of these snakes around may help you combat these pests.

One other snake often found in urban areas is the rough green snake *(Opheodrys aestivus)*, our only true arboreal snake. They will seldom bite. These snakes are so well camouflaged that seeing one in shrubs and trees is extremely difficult. Green snakes consume spiders, caterpillars, and various other invertebrates.

These predators provide value to humans. They eat many other animals, often many we consider pests. Thus, snakes are important participants in the ecosystems in which we live. Without properly functional ecosystems, the quality of *our* lives will deteriorate. Unfortunately, snakes are declining in abundance, and this, as much as the pollution in our air and water, signals a deterioration of our ecosystem.

Understanding the roles of all predators, including snakes, lessens our fear of them. The next time you find a snake in your yard or garden, remember the role it plays in maintaining the quality of our lives. Don't fear it. And, also remember that we too are predators, kindred spirits with snakes. □

Joseph Mitchell is the principal researcher on a statewide reptile and amphibian survey funded by the Game Department's Nongame Program.

Lake Gaston: An Angler's Paradise

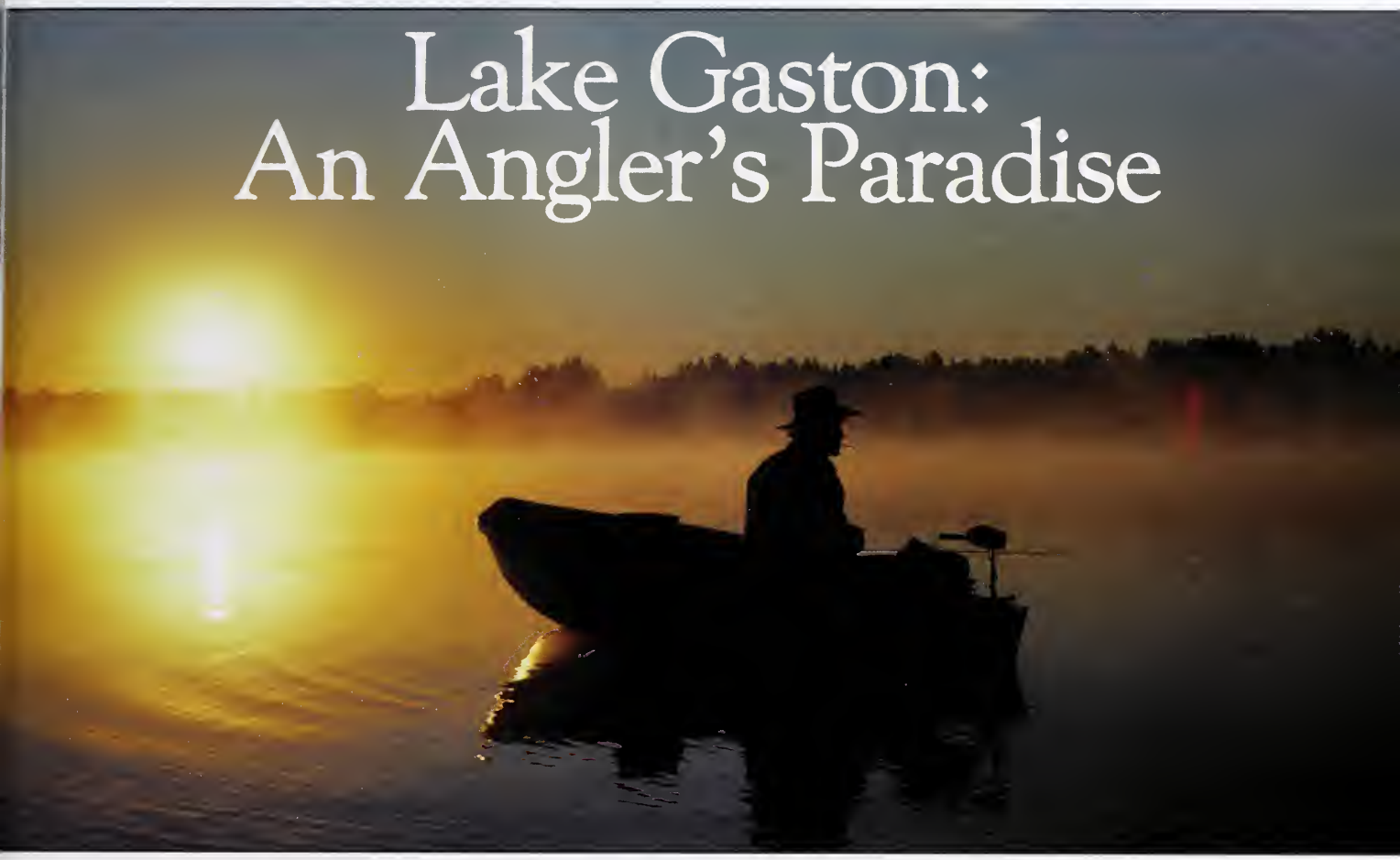


photo by Gregory Scott

by Gerald Almy

The day began with swirling gray fog and a long, tedious boat ride to our chosen fishing spot—a bridge crossing a feeder arm of Lake Gaston on the Virginia-North Carolina border. When the concrete pilings of the span finally loomed into view, we positioned the boat 30 yards away, where the current funneled through the opening beneath the abutments. Then we threaded minnows on 1/0 hooks and cast them out into the flow with a pair of split shot for weight.

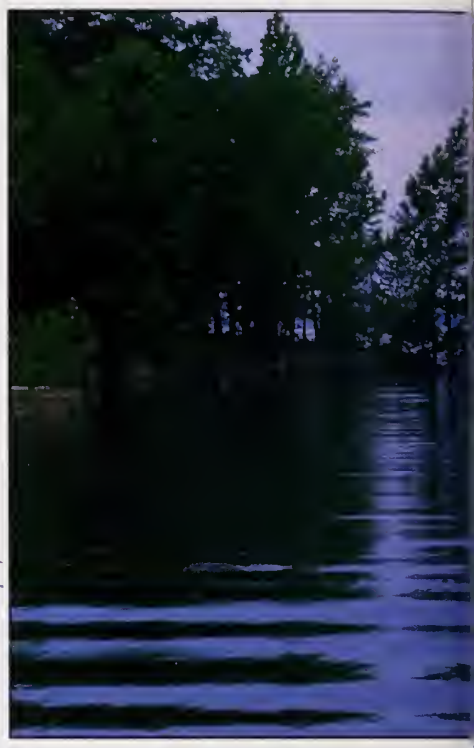
It seemed more like fishing a river than a lake, with the water being pulled from the dam downstream to generate power and the current washing beneath the bridge span like a churning creek. And that's why the game fish were here. We could see them sporadically slashing on top as they chased down shad and minnows finning in the oxygenated water. And soon enough we felt them as solid takes on our four-inch shiners.

Lake Gaston is still an angler's dream, even after 30 years. Here's why.

Duran was first. Feeding line to the nibbling quarry, he suddenly took up slack and set the hook hard. Moments later a four-pound largemouth erupted from the lake and belly-flopped down onto the fog-shrouded waters. Before he could land his fish, I felt a frenetic *tap-tapping* on my line, followed by the pull of a large fish. This was a striper, and instead of brawling in close, it made a drag-stripping run toward mid-lake before I could slowly pump the 12-pounder in and hoist it aboard.

In less than 10 minutes we had caught two of the country's most popular game fish—largemouth bass and landlocked stripers. But that was just the start of what was to be a productive, marathon fishing day. After landing several more stripers and another largemouth, we took a break for a mid-morning breakfast of eggs, hash browns, bacon and biscuits, then turned to strictly bass fishing, casting plastic worms, grubs and crankbaits towards dock pilings points and underwater humps. This added 10 more bass up to six pounds to the tally, most of which we released.

After an evening dinner break, we replenished our minnow supply, headed back to the fish-harboring bridge abutments and drifted shiners past sunset and into the black of night. When the moon shone high overhead at midnight, bathing the water in a bright white light, we were



Fishing on Lake Gaston requires some preplanning to find good structure, but the rewards are big in terms of largemouth bass,

still hooking stripers, almost all in the 8-14 pound class. But fatigue had caught up with us. Reluctantly, we reeled in our lines and headed to the dock. We had landed a dozen bass and nearly 160 pounds of stripers, all but four of which we released unharmed. As a bonus, we had taken several white perch in the one-pound class and a handful of channel cats. It had been an exhausting fishing session, but the varied catch and steady action made it one of the most enjoyable days on the water I can remember.

Credit for that goes to Lake Gaston. With many newer lakes being built in recent years, Gaston sometimes gets overshadowed. But this nearly 30-year-old impoundment on the state's border with North Carolina is one of the most consistent fishing waters in Virginia and offers a rich variety of angling that can satisfy just about anyone's tastes.

Located just west of Interstate 95, this 20,300-acre clear-water lake continues to offer excellent angling in spite of its age. Last year alone, Lake Gaston yielded 141 citation-sized game fish representing nine different species.

Lake Gaston has produced state record largemouths three times, and every year accounts for numerous citation fish over 8 pounds. Last year, it gave up 28 citation bass—11 more than the next best body of water in the state—Lake Anna.

Large stripers also come from the lake. Gaston once held the Virginia record for this fish with a 32-pound, 3-ounce specimen. During 1990, 55 citation stripers were caught here—second only to Smith Mountain.

Gaston has few pickerel today, but in the past yielded North Carolina's state record for this slender green game fish—an enormous 8-pounder.

Crappies and white perch also grow to above-average sizes in Gaston, with perch over a pound and crappies topping two pounds not uncommon. The lake was the second best producer of citation crappies in Virginia last year and yielded the state's biggest white perch for '90—a 2-pound, 2-ounce fish caught by Randy Clark.

Walleyes up to 10 pounds have been taken, and large channel catfish are occasionally brought to the net. Bluegills don't grow particularly big in the lake, but good numbers of 1/3-1/2 pounders are available for those dunking worms and crickets or fishing sponge-rubber spiders on a fly rod.

At first glance, however, it doesn't seem that Gaston would harbor such an abundance of quality game fish. It's a rather clean-looking body of water that was cleared of dead and living trees and buildings before being filled. The 34-mile long lake does have many feeder arms and coves that give it over 350 miles of shoreline, but there are few sharp bluffs or steep banks to fish, since it lies in the gently rolling piedmont section of the state.

If you look carefully, though, there actually is quite a bit of "structure" for bass and other game fish to use. Stray rocks, brushpiles and logs can occasionally be located near shore and there are stumps left below the surface where trees were cut before the lake was formed. Creek and river channel edges provide good deep-water habitat, as do humps and points that jut out into the lake. Weedbeds are common in warm weather. Man-made structure such as boat docks, ramps, bridges, riprap along roads and buoys also offer congregating points for forage and game fish.

One factor that many believe may be responsible for the quality fishing on Gaston is the buffering effect its sister reservoir upstream provides—Buggs Island Lake. When heavy rains

stripers, crappies, bluegills, catfish, and white perch; photo by Roy Edwards.

and floods wash silt and debris down the Roanoke, most of this ends up in Buggs Island and tends to filter out before it reaches Gaston. Often when the larger upstream lake is reddish brown with mud, you can find clear water in Gaston, or at least in the lower reaches of it and large feeder creeks such as Pea Hill.

Gaston is a power generation lake and this also may help keep its fishing of a high quality. The flow of water when power is being generated seems to turn game fish on and creates current that concentrates baitfish for them to feed on.

Largemouths are without question the premier sport fish in Gaston. With fish up to 14 pounds available, it's not surprising why that's so. Gaston bass seem to average larger than on many lakes, with 2-3 pounders fairly routine.

Action gets underway in the shallows for pre-spawn fish in late February, with March and April being particularly good months for working shallow crankbaits and spinnerbaits in covers and over points in thin water. Think shallow water for this fishing—two to six feet, and probe cover such as rocks, riprap, brushpiles, dock pilings and boat ramps, as well as simply casting the banks in sun-warmed coves.

In May and June plastics such as grubs, worms, lizards and tube lures become the weapons of choice during midday, with topwater plugs scoring well early and late. Except for the early plugging, concentrate on slightly deeper water at this time—5-15 feet. Live minnows are also deadly during late spring, either floated beneath a bobber or cast and retrieved like a plastic worm with a few split shot on the line for weight.

In recent years, Brazilian elodea has been introduced into Lake Gaston, and more recently still, hydrilla. These weeds may ultimately be harmful for the lake, but for the present time they have provided some excellent hot-weather fishing with spinnerbaits, shallow crankbaits and weedless spoons. Besides these weedbeds, summer fishing can also be good near deep points, offshore humps, islands, bridges and creek channel dropoffs. Work slab spoons, jigs, plastic lures and live minnows over cover 15-35 feet deep. A structure fishing map (available from the Alexandria Drafting Company, 6440 General Green Way, Alexandria, VA 22312; 703/750-0510) is invaluable for this deep-water summer fishing. Another option during hot weather is to go out just before dusk and fish throughout the night with spinnerbaits, topwater lures and plastic worms. Large fish often prowl in thin water at this time.

In the fall, bass move into shallow and medium-depth waters again as the lake layers mix and the thermocline dissolves. Fish the same spots you did in April, May and June, with bridges, humps, docks and points prime casting targets. By late November bass action slows, picking up again in late February.

Since Gaston is a clear lake, lighter tackle than normal is preferable for bass fishing. A medium-weight baitcast or spinning outfit and 8-14 pound line is best.

Stripers are the second most popular game fish on Gaston, vying closely with bass for top billing. The lake does not support a naturally reproducing population, but is stocked heavily. Some stripers are taken in the lower lake early in the year at the dam and near the mouths of major feeder creeks. Drifting with shad or minnows or casting bucktails to points, current funnel areas and bridge pilings works best for these fish.

The premier spring angling, however, occurs in the headwaters of the lake, from the US 1 Steel Bridge upstream to the tailrace below Kerr Dam. The fish move up here because of the current flow, the abundance of food, and their instinctive urge to migrate upstream and spawn as waters warm in spring.

Drifting with live shad or anchoring and bottom fishing with cut shad from the steel bridge upstream for several miles near points, drop-offs, submerged humps, and eddies can be productive. You can launch on the north shore at the steel bridge Game Department ramp to fish these waters. Occasionally, early and late in the day, you may also find stripers chasing bait on the surface. These fish will strike topwater lures well or shallow-diving minnow plugs such as the Cordell Redfin.

The tailwater immediately below Kerr Dam is also a hotspot in spring. This area can be fished from a boat by launching at the steel bridge and motoring upstream several miles. The current here becomes boisterous when water is being released, so wear your personal flotation device (PFD) at all times and use extra caution. Employ a quick-release anchor or have a knife handy to cut the anchor line in case it becomes snagged on the bottom and the water starts to rise. Also, watch out for rocks as you motor upstream towards this area. There are some prop-eaters just below the surface as you get near the dam.

The first 1,000 feet behind Kerr Dam is off limits to boaters for safety reasons. You can still reach many fish that are below this no-entry zone with long rods and heavy white buck-

The first 1,000 feet behind Kerr Dam is off limits to boaters, but you can still reach this area with long rods and heavy white bucktail jigs or fish from the shore with even longer surf rods; photo by Roy Edwards.

tail jigs—the number one offering of the tailwaters. Cast out and across and work the jig slowly so it swings around in the current near the bottom, pumping it occasionally. Rods should be 8-9 feet long and spinning reels are best, filled with 10-14 pound line to allow long casts.

This water can also be fished from shore by leaving your car at the Kerr Dam parking lot off of US 4. If you choose this method, even longer surf rods can be employed—10-13 feet. Beside bucktails, shore anglers use big slab spoons in the 3-4-ounce size and also live shad rigged with an 18-35-inch leader trailing from a three-way swivel and a 1-3-ounce dipsey sinker on a short dropper.

After they start filtering back to the main lake in May and June, trolling is a popular way to catch Gaston stripers. Some anglers use diving planers such as the Luhr Jensen Pink Lady to take 1/2 to 1-ounce white bucktails deep; others like downriggers. One of my favorite trolling rigs consists of a deep diving lure such as a Hellbender, Waterdog or Storm Big Mac with a 24-36-inch leader tied to the center of the front treble and a 1/4-ounce white bucktail jig attached to this. The big plug takes the jig deep and acts as an attractor, but most fish strike the smaller trailing lure.

In the fall and early winter, Gaston stripers feed aggressively. Sometimes you'll find them slashing on top early and late in the day and can cast surface or shallow-diving lures to make good catches. Trolling continues to produce and drifting with live shad or minnows near the dam and bridge once again becomes productive. Fishing after dark is superb at this time.

After bass and stripers, crappies are the most sought after game fish in Gaston. March and April see fish in the shallows, spawning near brushpiles, docks and logs near shore. Water in the 2-6 foot range holds the most fish and the top offerings are live minnows, small jigs or a combination of the two. After the spawn, fishing underwater humps, drop-offs, creek channel edges, brushpiles in deep water and bridge abutments are the best bets.

White perch are fairly plentiful in Gaston and citation-sized fish are fairly common. Bridge pilings and the edges where points drop off into deep water are the best locations. White perch strike live minnows with gusto and also take vertically jigged slab spoons at times.

Catfish are best sought out with cut shad, nightcrawlers or commercial baits fished on the bottom over flats, points, and near riprap close to roads and bridges.

With largemouth, stripers, crappies, bluegills, catfish, and white perch in abundance, and many growing to citation size, this 30-year-old lake has plenty of variety to please just about any angler. □

Gerald Almy lives on the banks of the Shenandoah River and has been a full-time outdoor writer for 17 years. He is currently a hunting and fishing editor on the staff of Sports Afield *magazine.*

I'll Take The Dog Days

by Bill Black

Don't be fooled by the summer heat. The dog days of summer are **hot** *for largemouth bass fishing—if you know how to fish them.*

If you want to catch largemouth bass during the summer, remember to fish deep and fish structure; photo by Doug Stamm.

Would you be satisfied with a total of 17 largemouth bass that weighed 53 pounds? That's an average of just over 3 pounds per fish. Not something for the record books, but still a decent stringer of bass, especially when you consider that the last three B.A.S.S. Classics were won with catches of 15 fish weighing approximately 30 pounds. Maybe you will be more impressed when you consider the following facts about this 53-pound catch: 1) These fish were caught on seven trips during the "dog days" of summer, from June 30 through August 9, 1990; 2) With one exception, I spent no more than three hours per trip bass fishing; 3) They were caught on the Chickahominy Lake in the eastern part of Virginia, a lake that receives as much fishing pressure as any other freshwater impoundment in the state; and 4) All of the bass were caught at four specific locations on either a plastic worm or crankbait.

Having kept detailed notes on over 300 fishing trips during the past six years, my records indicate that my best period for quality bass fishing is always July and the first part of August. That's right, the hottest time of the year means the hottest bass fishing. I must admit that one reason for my "dog days" success is the fact that I concentrate on bass fishing during this time. There is no doubt that the pre-spawn months of February and March are great for big bass; however, I am normally crappie fishing during this period. I save most of my bass fishing for those sultry days when many bass fishermen are complaining about the poor fishing conditions.

I am positive that my bass production would double if I spent more time bass fishing during the summer. My average trip combines three hours of bass fishing with six hours of crappie or bream fishing. I seldom stay on any bass hole for more than an hour, and I always leave a spot after catching no more than two fish from it. As a matter of fact, I normally limit myself to two bass per trip, a limit which satisfies me.

How do I consistently catch quality bass in a short period of time during the "dog days" of summer? The fishing is relatively easy if you understand how bass behave during

this time. Bass bunch up in specific areas during the heat of the summer, much like they do in the winter. But, unlike their winter behavior, summer bass are normally in an aggressive mood. One thing is certain during summer or winter—the larger bass spend the majority of their time in deep water. Thus, the secret to summer bass fishing is to fish deep water structure. I didn't write the book on this idea. Buck Perry is the father of deep water structure fishing. A renowned author and teacher, he has written numerous articles on bass fishing in which he stresses one theme—fish deep for big bass. Though I credit his wisdom, I must give myself a pat on the back for having sense enough to follow his advice.

Most of the people I see during the summer are still throwing spinnerbaits along shorelines or to visible stick-ups in shallow water. There is no doubt that you can catch some fish this way, but consistently catching large bass using this method is definitely the exception rather than the rule in the summer. As a matter of fact, the post-spawn period in June is the only time of the year that I will fish a shoreline, and that's only because I enjoy the excitement of topwater fishing. The fish I catch along shoreline are never as big as the ones I catch offshore. This holds true throughout the year, and I catch my fair share of large bass.

You hear about a lot of fish being caught in the shallows during the spring and fall. It's true that more fish are scattered in the shallows during this season; however, it's also true that these periods receive the maximum fishing pressure, and that's because the average fisherman only fishes shallow water. If these same people learned how to fish deep during the summer and winter, I believe that you would see a new chapter written as to when is the best time to bass fish. It's a known fact that big bass are notoriously finicky and lockjawed while on the spawning bed. Find the same bass in deeper water during the pre-spawn or summer, and he will aggressively take your offering.

There is a definite systematic approach to deep-water fishing. You must first locate the areas where bass consistently congregate, and they don't pick just any place to bunch up. Bass travel and live along structure, defined as being an abrupt change in bottom depth. Structure can be an underwater island that rises from the surrounding bottom, a point, a drop-off created by the edge of an old river or creek channel, or a submerged roadbed. Locate cover on this structure such as bushes, trees, stumps, rock piles, etc., and you have found the fish. Depth is relative depending upon the body of water; 10 feet may be considered deep in a lowland lake, while 25 feet may be the key in deeper highland impoundments.

Once you find the prime areas, be sure to fish them slowly and thoroughly with lures that will stay in the strike zone. I use just two lures, plastic worms and crankbaits. While the worm can be used at any depth, I limit my use of the crankbait to 12 feet or less. Fish the worm slowly, remembering that most strikes will occur while the worm is falling. I use a short, pumping motion. The key to success with a crankbait is to be sure to hit something with it, and I don't mean open water. Use a crankbait that dives deep enough to bounce along the bottom and through the cover, as the fish will hit this lure as it bounces off these objects. Although your crankbait will hang up on occasion, many times it will be hung in the jaw of a bass. I use a weighted lure retriever to reclaim those lures that do get snagged, and I only lose one out of 10 lures.

To be a successful deep-water fisherman, you will need to invest in a depth finder or fish locator. They are an absolute must to locate the fish holding areas. There are many inexpensive models on the market that will suffice. Get one you feel comfortable with and keep it simple—all it needs to be able to do is locate the structure and cover. I see fishermen all the time with $20,000 boats with no depth finder, or equipped with one they don't use. My depth finder, not my boat, is my most important fishing tool. You can be successful in an inner tube as long as it is equipped with a depth finder. It will take a little time and patience to learn how to use this tool to locate the prime areas, but you will reap a substantial return on your investment.

All of the bass I mentioned at the beginning of this article were taken in 10 to 15 feet of water. They were concentrated along four drop-offs that held cover such as trees or stumps. Very early or late in the day I used either a plastic worm or crankbait to fish the shallower areas, switching exclusively to the worm to comb the deeper drop-offs during the heat of the day. I should mention that my biggest fish were caught during the midday heat. A 7-pound, 10-ounce fish was caught at 11:30 a.m. while fishing a worm through stumps in 15 feet of water. I also caught a 6-pound, 6-ounce fish earlier that same day along a drop-off in 10 feet of water.

An extra word about fishing during the heat of the day. A survey of my records for July/August of 1988 indicate that all but two of my bass were caught from 12 noon to 5:30 p.m. Air temperatures ranged from 90-99 degrees on each trip, with water temperatures hovering between 83-90 degrees. My largest fish during the period was caught at 3:00 p.m. Fish are less affected by the intense heat than us fishermen. They simply move to the cooler, deeper water.

You, too, can experience successful bass fishing during the summer heat if you remember to follow these simple rules: Stay away from the shoreline and fish deep-water drops that hold adequate cover. Fish these areas thoroughly with lures that will stay in the strike zone. Be prepared to catch fish at any time of the day and in any type of weather.

So, break away from old habits, go deep in the summer, and you will experience a whole new world of bass fishing. I am sitting here right now dreaming about this year's "dog days." □

Bill Black fishes 60-80 days a year, teaches a freshwater fishing seminar and lives in Richmond.

Amelia Sporting Clays Range: New Hours, More Fun!

The Virginia Department of Game and Inland Fisheries' sporting clays range on Amelia Wildlife Management Area is extending its hours for the summer. The course will now be open for shooters on the following days:

Thursdays: 12 noon to 6 p.m.—Open—no reservations required

Fridays: 8 a.m. to 4 p.m.—reservations required

Saturdays: 8 a.m. to 4 p.m.—reservations required

Sundays: 12 noon to 4 p.m.—reservations required

Come try out one of the fastest growing sports around, and test your shotgun skills on 11 stations, each designed to test and improve the skills of the wingshooter with clay targets thrown in imitation of flying ducks, running rabbits, flushing quail and other game.

Reservations are required on every day except Thursdays by calling the Virginia Department of Game and Inland Fisheries at 1-800-252-7717 or 804/367-1000.

The fees per round are: Adults over 15 years: $20. Youths 15 years and younger: $10. A discount of $5 per round is given with the presentation of a valid Virginia hunting license.

The course is located about 30 miles west of Richmond between Rte. 60 and Rte. 360. □

Tazewell County Lake To Open July 1

Lake Whitten, a 52-acre Soil Conservation Service lake in Tazewell County will open July 1, two weeks later than reported in the 1991 Fishing Guide featured in the April issue of *Virginia Wildlife*. The lake contains both largemouth and smallmouth bass as well as redbreast sunfish, and a size limit of 14 inches and a creel limit of two has been set on bass. A boat ramp and additional recreation facilities are planned for the future. Lake Whitten is located north of Tazewell via Routes 165 and 643. □

"Virginia Wildlife Watcher's Guide" Now Available

Fresh off the press, you won't want to spend the summer without your 20-page "Virginia Wildlife Watcher's Guide" produced by the Virginia Department of Game and Inland Fisheries. This tabloid is full of specific information in a county-by-county format on the best places to view wildlife, complete with directions on how to get there. The guide also provides an update on the progress of Virginia's Nongame and Endangered Species Program, new environmental laws that protect wildlife, and a list of Virginia's threatened and endangered species. Get your copy *free*, by writing to the Virginia Department of Game and Inland Fisheries, "Wildlife Watcher's Guide," P.O. Box 11104, Richmond, VA 23230-1104. □

June is Youth Fishing Month

Governor Wilder has officially proclaimed the month of June as Youth Fishing Month in Virginia. Take a kid fishing!

Habitat

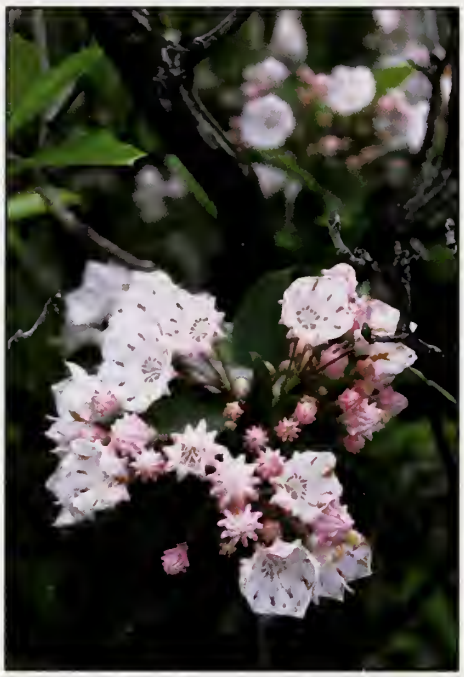
Mountain Laurel

by Nancy Hugo

Spoonwood, plant ivy, and calicobush are all colloquial names applied to *Kalmia latifolia*, the broad-leaved evergreen that blooms on rocky slopes, in the understory of woodlands, and along swamp margins in Virginia in late May and early June. But, to most Virginians, this beautiful shrub is mountain laurel.

Mountain laurel is often confused with rhododendron, but the two shrubs, although related, are different. Both the leaves and flowers of mountain laurel are smaller than those of rhododendron. Mountain laurel has evergreen leaves that are about 3-4″ long and ½″ wide; they are a medium green on top and yellowish green underneath. Rhododendron's evergreen leaves are 4-11″ long, 1½ - 2½″ wide, and they are dark green on top with whitish undersides. Once you get to know them, the flowers of mountain laurel are also unmistakable. They are a deep pink in bud opening to form white or pinkish flowers marked with delicate purple penciling on their inner surface. The buds are shaped like cake decorations—precisely fluted and tapering to a point, and each blossom, formed of five fused petals, is shaped like a tiny cup. Clusters of 10 to 30 of these buds and flowers form showy masses on the shrub's contorted branches.

The pattern these flowers form reminds some observers of the pattern in a calico print, hence the common name calicobush. The name spoonwood derives from uses to which the shrub's wood has been put. Hard, strong, and close grained, mountain laurel wood has been used to make wooden spoons, tool and bucket handles, and pipe bowls. (A 1928 field guide reports that 85,000 pounds of mountain laurel wood were used annually for pipes in North Carolina.) Where it's abundant and grows to tree size, as it does in parts of the Appalachians, the wood of laurel is also used for fuel. "Plant ivy" is what early settlers called the shrub, and they were quick to spot the ornamental value of the shrub and move it into their gardens. The Swedish botanist Peter Kalm, who studied the plants of the Eastern U.S. in the 18th century, sent specimens of mountain laurel to his teacher Linnaeus, who rewarded his student by naming the plant genus *Kalmia* after him.



Mountain laurel; photo by Roy Edwards.

Because it forms dense thickets, mountain laurel is an important source of wildlife cover. The shrub's evergreen leaves as well as its buds and twigs are also eaten by deer, ruffed grouse, and black bears, who seem immune to the toxic properties of the plant which is reputedly poisonous to both livestock and people.

The characteristic of mountain laurel that I find most fascinating has to do with the way the flower's stamens are cocked like tiny catapults to pop out of pockets in the flower petals when a bee comes along and trips them. Look at a newly-opened mountain laurel flower carefully and you'll see the way the flower's anthers are lodged in these pockets ready to pop out and douse a visiting insect with pollen. Mountain laurel seed pods—¼″ woody capsules from which persistent styles protrude—are beautiful, too, and even the white-fringed black dots that sometimes appear in winter on the underside of mountain laurel leaves have interest. According to naturalist Donald Stokes, these dots encase the eggs of scale insects on which chickadees and kinglets feed.

Emerald green most often carpets the forest floor under mountain laurel in my woods, and it seems this is more than a happy accident. Not only are both plants lovers of acid soils, but it seems low moss creates the ideal moisture conditions for mountain laurel seeds to germinate. In the woods, mountain laurel also spreads by underground roots and by layering (rooting where branches touch the ground), but until recently the plant has been notoriously hard for nurserymen to propagate, which is why it wasn't sold more as an ornamental plant.

New propagation techniques make nursery grown plants more readily available now, but in nurseries mountain laurel is still less common than rhododendron. Maybe it's because we see it more often in the wild than in cultivation that mountain laurel still seems to bring an air of wildness with it into gardens, and, like the cool, fresh air an outdoorsman brings with him into a stuffy house, it's as welcome as refreshing. □

Photo Tips

"Rule of Thirds"

by Lynda Richardson

I was laying on my stomach next to a sinkhole pond in the George Washington National Forest near Waynesboro. It was a hot, lazy afternoon and I was watching young bullfrogs float around in the shallow, dark water. As the sun began to disappear behind the thick, green foliage that surrounded the pond, I watched the frogs pose in the fading light, their big golden eyes sometimes the only thing I could see.

As I studied the scene before me, I tried to think of how I could photograph these peaceful moments. I chose a long lens (500mm f4.5 with a Canon T-90 camera) so as not to disturb the frogs and crawled on my belly to the lens' closest focusing distance. Using the water as a background and foreground, I decided to apply the "rule of thirds" for composition to create the images I sought.

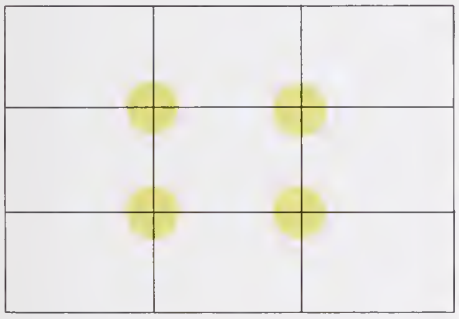
The rule of thirds is one of several compositional rules to keep in mind when deciding how to shoot your pictures. What this rule refers to is mentally dividing your viewfinder image area into thirds both horizontally and vertically. Then, you place your subject into one of the four places where these imaginary lines intersect.

Too many beginning photographers automatically place their subjects smack dab in the center of every frame and never experiment to achieve the best composition. How boring! When I have cooperative subjects, I experiment.

When using the rule of thirds, I might start horizontally and shoot pictures of my subject on the top left of my image area. Then, I'd try it on the bottom left. Continuing with the horizontal format, I may start all over again shooting everything on the right side, top and bottom. If the situation allows, I try the same thing all over again vertically.

You might be surprised to discover how different placements change the impact of your photograph.

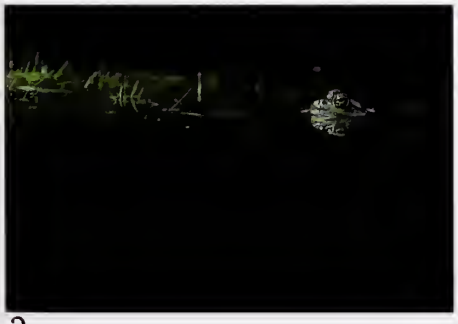
The following photographs should give you an idea as to what I mean by the rule of thirds. Now it's up to you. □



Using the rule of thirds means mentally dividing your viewfinder image area into thirds both horizontally and vertically, and placing your subject on one of the four intersecting points.

1. *All I could see of this bullfrog was his head in the last rays of sunlight. He sat very still and I chose to shoot horizontally first, placing him in the bottom right third of my frame.*

4. *Trying the vertical format, I placed my subject in the top third of my picture.*



2. *Still sitting quietly, I chose to move my lens to place the frog in the upper right third of my image area. I think photograph #1 "works" better.*

3. *As one frog faced the camera, I chose to put him in the lower left third of my picture.*

5. *Here's how he looks in the bottom third of a vertical format.*

Family Outdoors

Swallowtails

by
Carl "Spike" Knuth

There are some 20,000 species of butterflies cataloged by science. Like mythical aliens out of the pages of a "Sci-Fi" thriller, butterflies taste with their feet and smell with their antennae. Their eyes are sensitive to ultraviolet, which enable them to find the flowers they feed on. The flowers stand out in much the same way military vehicles or troops do to special night vision glasses.

The colors of butterflies provide camouflage from birds and other predators. False eyes or eye spots provide deception targets, or serve to startle or scare predators. Studies show that butterflies even have homing abilities. Some, like the monarch, migrate thousands of miles to a common wintering ground. Some are capable of finding their way back to the same leaf night after night.

Swallowtail on tiger lily; photo by Lee. W. Lumpkin.

Among the largest and best known of our butterflies are the swallowtails—the family *Papilionidae.* While most of them are found in the tropics, they are distributed worldwide. Most of them have the characteristic tail-like projections on their hindwings.

A variety of swallowtails are found in Virginia, including the spicebush, zebra, pipevine, black and giant swallowtails.

The eastern tiger swallowtail *(Papilio glaucus)* is one of the most common and familiar of the swallowtails, and was recently named the state insect by the 1991 Virginia General Assembly. It varies in size and color, measuring 4 to 5.5 inches in wingspan. In the North, the distinctive yellow wings with black stripes may be quite pale, while in the South, they are a richer yellow color. There are also some differences in colors between the sexes. Males are the familiar yellow with black tiger stripes and black wing edges or bands, spotted with crescent-shaped yellow markings. Females can be of the same color with blue bands fading to black edges with yellow and red spots on the hind wing.

Tiger swallowtails lay their spherical eggs on trees and shrubs that will feed the larvae when they hatch. Cherry and tulip poplar are among the favored host trees, but they'll use birch, poplar, willow, alder, aspen, sycamore ash and basswood (linden) as well.

The larvae are smooth and green with a pair of large, orange, black-pupiled eye spots on their back end. They also have flashy horn-like projections of yellow or orange which stick out from behind the head when threatened.

Once it is full-grown, the swallowtail caterpillar selects a place to begin preparing to form a chrysalis. It attaches its back feet securely with silk, and loops a tough strand of silk thread behind its body to form a "safety belt." As it begins to shed its skin, it begins to form a rough, shell-like brown and mottled green covering called a chrysalis.

The larvae—now called a pupa—will spend the winter in this form, but inside, amazing changes are taking place. Enzymes are actually dissolving the pupa. It begins to grow legs, antenna, new muscles and body parts, and a different type of mouth and wings. With the coming of spring, the first tiger swallowtails of the year emerge as adult butterflies. Fluids begin to flow through wing veins, expanding them, and the swallowtails take flight.

Despite its fragile appearance, the tiger swallowtail is a strong flier. It tends to "sail" more than other butterflies, and commonly visits city flower gardens. In addition to feeding on a variety of flower nectar, it regularly visits mud puddles, manure piles and carrion.

To learn more about butterflies, your local library or bookstore should be able to help you find the following guide books: *A Field Guide to Butterflies* by Alexander Klots (Houghton-Mifflin); *Audubon Society's Field Guide to North American Butterflies* (McGraw-Hill); *Butterflies of North America* by Dr. James Scott and *Butterflies and Moths* by Mitchell and Zim (Western Publishing). □

Recipes

Ideas for Panfish

by Joan Cone

Too many people assume the only way to prepare brim, perch, crappie and rock bass is by frying and picking your way through a mess of small, sharp bones. Here is another answer. Either at home or by a campfire, you can poach these small fish. Then you can easily remove skin and bones, using the cooked, flaked fish in tasty recipes.

Poached Small Fish

4 to 6 small panfish
2 tablespoons lemon juice
2 tablespoons water
1/4 teaspoon salt

Place an inch of water in a deep skillet and bring to a gentle boil. Arrange your fish on a piece of heavy duty aluminum foil and turn up edges of wrap. Add lemon juice, water and salt and then place in skillet. Cover and cook gently for 5 to 10 minutes or until fish flakes easily when tested with a fork. Then remove skin and bones and flake fish.

Note: Flaked fish can be frozen in an airtight container and kept up to three months.

Minnie's Fish Cakes

2 cups of cooked, flaked fish
1 teaspoon salt
Dash pepper
1 teaspoon rubbed sage
1 egg or 1/4 cup egg substitute
1/2 teaspoon instant minced onion
Cracker meal
Butter or margarine

Mix first 6 ingredients and just enough cracker meal so they will adhere to be formed into cakes. Roll your fish cakes in cracker meal and saute' in just enough butter to brown on both sides. Makes 4 servings.

Tasty Fish Snacks

1 cup cooked, flaked fish
1 cup grated, sharp Cheddar cheese
1/2 cup margarine or butter
1 tablespoon Worchestershire sauce
1 1/2 cups flour
1 teaspoon salt
1/4 teaspoon cayenne pepper
1/4 teaspoon paprika

In a food processor or blender, combine all ingredients. Process until smooth. Using a tablespoon, form fish mixture into balls and place 4 inches apart on a well-greased cookie sheet. Flatten each ball with the tines of a fork. Bake in a 325 degree oven, 12 to 15 minutes or until lightly brown. Makes approximately 25 snacks.

Fish and Spaghetti Casserole

2 cups cooked, flaked fish
1 can (4 ounces) mushroom stems and pieces
2 tablespoons flour
1 teaspoon salt
1/4 teaspoon pepper
2 tablespoons melted margarine or butter
1 1/4 cups milk
1 cup grated Cheddar cheese
2 tablespoons chopped pimiento
2 cups cooked spaghetti
1 cup dry bread crumbs
2 tablespoons melted margarine or butter

Drain mushrooms, reserving liquid. Blend flour and seasonings into margarine. Add milk and mushroom liquid gradually; cook until thick and smooth, stirring constantly. Add cheese, pimiento, mushrooms and fish; stir until well-blended. Layer half of the spaghetti, then half the fish mixture in a well-greased 1½-quart casserole. Repeat layers. Combine crumbs and margarine; sprinkle over top of casserole. Bake in a 350 degree oven for 15 to 20 minutes or until bubbly. Makes 6 servings.

Cool Fish Salad

2 cups cooked, flaked fish
3/4 cup mayonnaise or salad dressing
2 tablespoons prepared mustard
2 tablespoons lemon juice
1/2 teaspoon sugar
1/8 teaspoon cayenne pepper
1/8 teaspoon dry mustard
1/2 cup finely chopped celery
1 apple, cored and chopped
2 hard-cooked eggs, reserve yolks and chop whites
Salad greens

In a 2-quart mixing bowl, combine mayonnaise, prepared mustard, lemon juice, sugar, cayenne pepper and dry mustard. Add fish, celery, apple and egg whites; toss lightly. Serve on crisp salad greens. To garnish, serve egg yolks over salad. Makes 4 servings.

Fish Loaf

2 cups cooked, flaked fish
1 egg, beaten
1/4 cup half and half cream
3/4 cup dry bread crumbs
1/2 teaspoon salt
1/4 teaspoon paprika
1 tablespoon lemon juice
1 tablespoon melted butter or margarine
2 tablespoons minced parsley
1 teaspoon instant minced onion

Combine egg and cream; add to flaked fish. Add remaining ingredients and mix together with a fork. Pat the fish mixture into a greased loaf pan and bake at 400 degrees for 30 minutes. Serves 4. □

Safety

Think Before Going Canoeing

by Mel White

Rolling into the office the morning after the start of daylight savings time was grim enough, but this morning was exceptionally gloomy, because the boating accident reports were coming in. Perhaps the winter had lulled me into complacency. Jack Cox, our boating safety and education coordinator hadn't mentioned an accident in months and I had to assume that nothing spectacular or tragic had happened, if I thought about it at all.

Now suddenly there were three, all this weekend, all in canoes and all dead or missing long enough to fear the worst. The office conversation boiled down to one question. Why?

As I write, I don't know the details of these invaluable losses, but there are enough elements present to make me reflect on what makes people take unnecessary chances. I know a fellow whose family has a tradition of jumping off high places, like bridges, into the water. They get their thrills, I guess. They also research the fall, the water below and what's under it. They don't always make it, but at least they have gone into it with some calculation and thought, with an understanding of the great risk that they are taking.

What prompted this weekend's adventures? I can only guess. It was wonderful weather; early spring, warm, soft, inviting. Trees were budding everywhere and everywhere birds claimed their territory with song.

The James River was strident, also. On its way down from the previous week's flood level it was still a muddy, malevolent snake of a waterway just waiting to strike the unwary. You need something to maneuver this beast. You need skill built upon experience and practice. You need the advice of people who live and work on the river every day. You need a canoe rigged for the conditions. You need safety equipment. You need that PFD strapped on your body, not laying in the bottom of the boat. Without these elements, river running rapidly goes from a dangerous sport to a reckless, and as we realized again this morning, deadly stunt.

Not all of Virginia's rivers were un-runnable this weekend. There were a number of places that would have made for a delightful trip. So why choose the stretches that, in a moment of miscalculation, can guarantee tragedy?

Take Williams Dam on the James in Richmond as a classic case of a challenge that just isn't worth the risk. On a summer day with low water people walk across this squat little dam, casually fishing. At flood levels the dam all but disappears from view; at levels like we had that weekend this type of dam is a perfect drowning machine. Water swirling and curling draws objects . . . trees, boats, and people back to the face of the dam, holding them tightly as they churn round and round. With people, it seldom turns them loose in time. Hundreds, maybe thousands of canoeists have shot this dam successfully. The list of those who have failed has been lost in time. Sadly, we know that it is proably one higher after last weekend. A family tragedy is unfolding and I grieve for those close to the people who took the chance and failed.

I see our rivers as one of Virginia's greatest outdoor assets. I see them as places of boundless recreation. A place to run the rapids, to contemplate a lazy drift with a pole and minnow, to sit on a bank and watch an otter play, a place to swim and frolic under a summer sun.

There were calls for information that day. "When is it safe to go into the water?" There's no answer beyond common sense and knowing your own skills and limits. The power of flowing water is awesome; please take my word for it. □

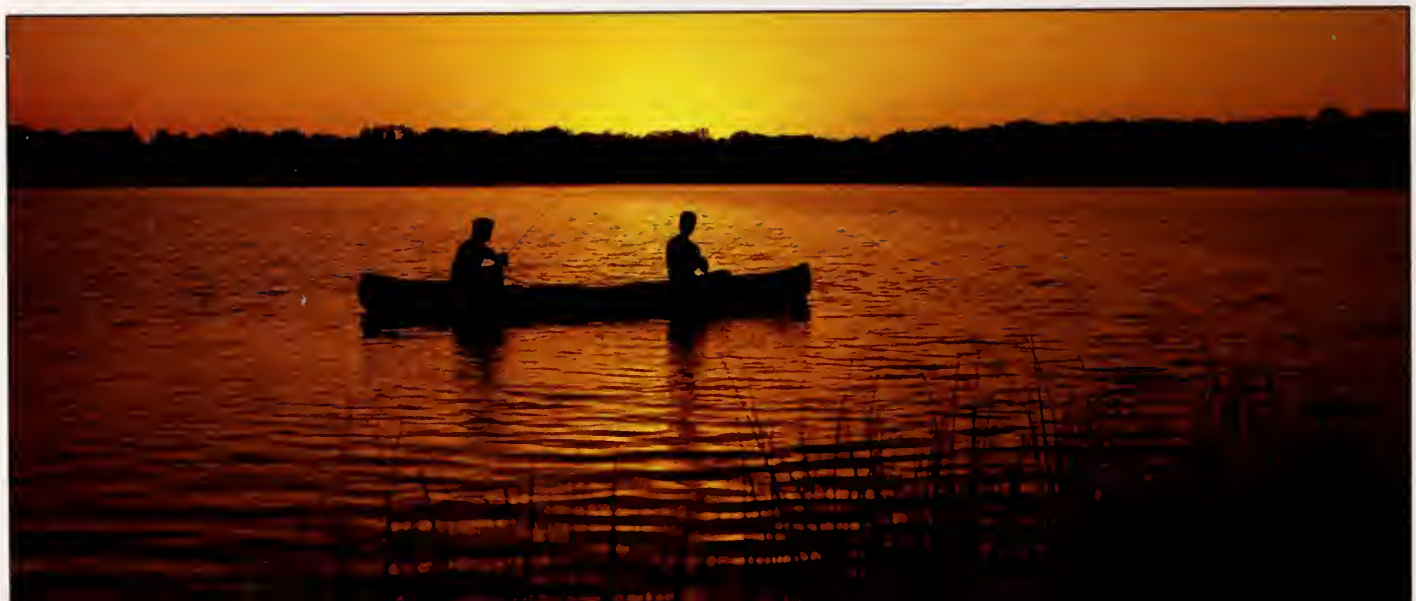


photo by Dwight Dyke

Bald eagle; photo by Bill Lane.

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Many of Virginia's wildlife are in danger. Suffering from habitat loss and the dangers of pollution which threaten their survival, many species in the state are struggling to survive.

The Department of Game and Inland Fisheries is responsible for the protection and conservation of all wildlife in Virginia, but we receive *no* state tax dollars, and we need your help to do our job. Help us fund critical research and management programs for the state's nongame and endangered species by contributing to our Nongame Wildlife Fund, which is supported solely by voluntary contributions made through our state tax-checkoff program and direct giving.

Please send you tax-deductible check (made payable to the Treasurer of Virginia) to, Virginia Nongame Wildlife Fund, Virginia Department of Game and Inland Fisheries, P.O. Box 11104, Richmond, VA 23230-1104.

National Safe Boating Week
June 2-8
National Fishing Week
June 3-9